The stability of deposits in Islamic banks versus conventional deposits in Malaysia

Yusoff, Remali

The Stability of Deposits in Islamic Banks versus Conventional Deposits in Malaysia

Presented by:

Remali Yusoff

Supervised by:

Professor Rodney Wilson

A Thesis Submitted for the Fulfilment of the Degree of Doctor of Philosophy

Faculty of Social Sciences and Health
Institute for Middle Eastern and Islamic Studies
University of Durham

2004

Declaration

"I, the author of this thesis, declare that none of the material in this thesis has been previously submitted by me or any other candidate for a degree in this or any other university."

11th March 2004

Remali Yusoff
000336054

Copyright

"The copyright of this thesis rests with the author. No quotation from it should be published without his prior consent and information derived from it should be acknowledged."

11th March 2004

Remali Yusoff
000336054

Acknowledgments

First of all, praise be to Allah, The Most Gracious and Most Merciful; Allah, also the Cherisher and Sustainers of the World.

I would like to express my deep gratitude to all the people who contributed to the successful completion of this thesis.

The first and foremost word of appreciation goes to my much respected supervisor, Professor Rodney Wilson, for his invaluable support and encouragement, and also his constructive comments and advice throughout the various stages of this thesis. In addition, he encouraged me to expand my horizons with this research, provided wise guidance when I needed it, and gave me room to explore, to make mistakes, and to learn. His relaxed and friendly style of supervision has made him exceptionally pleasant to work with. Above all, his expression of confidence in my ability helped a great deal to ease the pressure on my research and study. My appreciation is also extended to Dr. Humayon A. Dar from the University of Loughborough for his valuable comments and suggestions. I also extend my appreciation to Dr. M. Shahid Ebrahim from University of Nottingham for the suggestions he has made during my viva.

I would like to extend my gratitude to the staff of the Institute for Middle Eastern and Islamic Studies at the University of Durham for their help, kindness, and friendliness which made me feel at home.

I would like to record my appreciation to Vice Chancellor Y.Bhg Tan Sri of Univ. of Malaysia Sabah, Prof. Datuk Seri Panglima Dr. Abu Hassan Othman and his family for their kindness in giving me the chance to pursue my PhD studies at the University of Durham, United Kingdom. My appreciation also goes to the Malaysian government and the University Malaysia Sabah for sponsoring my studies for nearly four years. I am also grateful to the officials at the Malaysian High Commission for their administrative help.

I should also like to take this opportunity to record my thanks to my friends at Durham and Newcastle who have made my stay in these two cities more enjoyable, and to all my friends in Malaysia and the United Kingdom whose discussions and ideas have helped in this study in various ways.

I also find myself indebted to all my family who made special contributions towards the completion of this thesis. My heartfelt thanks are extended to my mother, and to all my

brothers and sisters, for their endurance and support throughout my period of study at the University of Durham.

Last, but by no means least, my deepest gratitude goes to my wife and my daughter for their immeasurable patience and support, and for the numerous sacrifices they have made so that this thesis could be completed.

RBY
Kubang Kerian
Kota Bharu
2004

The Stability of Deposits in Islamic Banks versus Conventional Deposits in Malaysia

Abstract

The objective of this study is to determine the main factors influencing the Islamic and conventional deposits in Malaysia's banking system. A structural model of the Malaysian money deposits applied to annual data for the 1983–2001 periods was designed. This structural model consists of five behavioural equations and three identities. A structural model functional form is used and estimated using the ordinary least square in the log linear form. The behavioural equations are used to estimate the influences of various factors on the conventional demand deposits, conventional time deposits, Islamic demand deposits, Islamic time deposits, and Islamic investment deposits.

The results of the analysis proved that the conventional demand deposits and conventional time deposits depend on the real gross domestic product, the interest rate distributed to demand deposit and time deposit depositors, the consumer price index, and the demand and time deposits lagged for one year. Islamic demand deposits and Islamic time deposits depend on the real gross domestic product, the profit-share distributed to demand deposit and time deposit depositors, the consumer price index, and the demand and time deposits of the previous year. It is also shown that the factors influencing the Islamic investment deposits include the real gross domestic product, the profit-share for investment, the consumer price index, and the Islamic investment deposits lagged for one year.

The implications of the study are that the increase in real gross domestic product, interest rate stability, and an increase in the profit-share for savings and investments are important for maintaining and enhancing the development of Malaysian money deposits. In addition, an assessment is made to evaluate the compatibility of the estimated and actual values.

The research hypothesis is answered with the help of three innovative testing techniques: (1) The Chow test for structural change; (2) Using the value of *t*, the value of the *coefficient* of the monetary base and the values of the adjusted R^2 to measure the correlation of the models; (3) Using the statistics of variances to measure the velocity of deposits.

The results show that all the models (conventional and Islamic banks deposits) are stable; however, Islamic demand deposits and Islamic time deposits are more stable than conventional demand deposits and conventional time deposits, because their Chow tests values are smaller than that of conventional deposits. In addition, the correlation between conventional and Islamic banks deposits models with monetary base indicated a stronger relationship between monetary base and conventional deposits than between Islamic banks deposits and monetary base. This evidence can be seen from the results of *t* statistics, values of *coefficient* and the values of adjusted R^2.

Despite the two aforementioned findings, the study concludes that the velocity of interest-bearing deposits is more stable than that of profit-sharing deposits. These results can be seen from the statistics of variance. In other words, if we look at the overall results of the hypothesis testing, it is clear that the conventional deposits are more stable than the Islamic banks deposits in the Malaysian banking industry.

In terms of the wider context, the accuracy of the model and the simulation results clearly proves that the conventional deposits are more stable than the Islamic banks deposits. This means that conventional banking and finance play a very important role in ensuring both economic stability and Malaysia's success in economic development.

Key words: conventional demand deposits, conventional time deposits, Islamic demand deposits, Islamic time deposits, and Islamic investment deposits.

Contents

Chapter One

Introduction

Chapter Four

Islamic Banking in Malaysia

Pages

Chapter Five

An Econometric Model of the Islamic and Conventional Bank Deposits in Malaysia

Pages

Chapter Six

The Regression, Simulation and the Hypothesis Test Results

Pages

List of Tables

No. Table Pages

Chapter One

Introduction

No Table

Chapter Two

Macroeconomic Performance and Policy in Malaysia

Chapter Three

Bank Negara and Monetary Policy in Malaysia

Chapter Four

Islamic Banking in Malaysia

Chapter Seven

Conclusion, Comments and Future Prospects for Research

No Table

List of Graphs/Figures

List of Abbreviations

ADB	:	Asia Development Bank
AG	:	Accountant-General
AIBIM	:	Association of Islamic Banking Institutions Malaysia
ASIATRADE	:	Asia Trade
BAEC	:	Bai' Al-Einah Contract
BAFIA	:	Banking and Financial Institutions Act
BIMB	:	Bank Islam Malaysia Berhad
BIS	:	Bank for International Settlements
BMMB	:	Bank Muamalat Malaysia Berhad
BNM	:	Bank Negara Malaysia
CBA	:	Central Bank Act
CBO	:	Central Bank of Malaysia Ordinance
CDRC	:	Corporate Debt Restructuring Committee
CPI	:	Consumer Price Index
DDC	:	Conventional Demand Deposit
DDI	:	Islamic Demand Deposit
DFIs	:	Development Finance Institutions
ECR	:	Export Credit Refinancing
EIA	:	Environmental Impact Assessment
EL	:	Eligible Liabilities
EMEAP	:	Executives' Meeting of East Asia-Pacific Central Banks and Monetary Authorities
EPF	:	Employees Provident Fund
EPU	:	Economic Planning Unit

FDI	:	Foreign Direct Investment
GATS	:	General Agreement on Trade in Services
GII	:	Government Investment Issues
IAB	:	Islamic Accepted Bills
IBA	:	Islamic Banking Act
IBD	:	Islamic Banking Division
IBF	:	Islamic Banking Fund
IBU	:	Islamic Banking Unit
ICCS	:	Islamic Cheque Clearing System
IDS	:	Islamic Debt Securities
IID	:	Islamic Investment Deposit
IMF	:	International Monetary Fund
INID	:	Islamic Negotiable Instrument of Deposits
KLIBOR	:	Kuala Lumpur Inter-Bank Offered Rate
KLSE	:	Kuala Lumpur Stock Exchange
KWSP	:	Kumpulan Wang Simpanan Pekerja
LOFSA	:	Labuan Offshore Financial Services Authority
MATRADE	:	Malaysia External Trade Development Corporation
MI	:	Money That Earn Interest
MII	:	Mudharabah Inter-Bank Investments
MITI	:	Malaysian International Trade and Industry
MMO	:	Money Market Operations
MNCs	:	Multinational Corporations
MNI	:	Money That Earn No Interest
MOA	:	Ministry of Agricultural

MSC	:	Multimedia Super Corridor
NDP	:	National Development Policy
NEAC	:	National Economic Action Committee
NEP	:	New Economic Policy
NIDC	:	Negotiable Islamic Debt Certificate
NSAC	:	National *Shari'ah* Advisory Council for Islamic Banking and Takaful
PDS	:	Primary Debt Securities
PDs	:	Principle Dealers
PETRONAS	:	Petroleum Nasional Berhad
PPI	:	Producer Price Index
RTGS	:	Real Time Gross Settlement System
SAARC	:	South Asian Association for Regional Cooperation
SC	:	Securities Commission
SIIA	:	Singapore Institute of International Affairs
SLMH	:	Special Scheme for Low and Medium Cost Houses
SMC	:	Sanadat (bonds) Mudharabah Cagamas
SMI	:	Small and Medium Industries
SPI	:	Islamic Banking Scheme
SPTF	:	Interest Free Banking scheme
SRR	:	Statutory Reserve Requirement
TDC	:	Conventional Time Deposit
TDI	:	Islamic Time Deposit
THLD	:	Treasury Housing Loan Division
TTRS	:	Two-Tier Regulatory System
UNCTAD	:	United Nations Conference on Trade and Development

UNESCAP	:	United Nations Economic and Social Commission for Asia and the Pacific
WTO	:	World Trade Organisation

CHAPTER ONE

INTRODUCTION

1.1 INTRODUCTION

In this chapter the author will introduce the main issues relating to the research. These include the statement of the problem, the objective of the research, the research hypotheses, the methodology, the importance and scope of the research, and the organisation of the research.

1.2 STATEMENT OF THE PROBLEM

The main aim of this study is to examine the development and performance of the deposits in the Islamic and conventional banks of Malaysia. The study is of particular relevance in that it will provide a better understanding of the fundamental characteristics of these deposits and will determine which are the factors influencing the Islamic and conventional bank deposits.

The author also aims to find answers to certain specific questions, such as how successful the Islamic banks have been in attracting depositors.

1.3 OBJECTIVES OF THE RESEARCH

The objectives of this research are empirically to analyse and develop a structural model of deposits in the Islamic (profit-sharing) and conventional (interest-based) banking systems which make up the Malaysian dual banking system. Therefore, a general econometric money demand model will be used to analyse the main factors influencing the Islamic bank deposits (profit-sharing) and the conventional bank deposits (interest-based). It is hoped that this model may be used to analyse the situation of both banking systems.

The main research focus may be divided into the following two objectives:

i) To analyse the main factors influencing the Islamic bank deposits (profit-sharing) and the conventional deposits (interest-based) in the Malaysian dual banking system, and

ii) To estimate factor elasticity for every model parameter in order to produce information which may be important for policy making in Malaysian banking institutions.

1.4 RESEARCH HYPOTHESES

Islamic monetary instruments work side by side with conventional monetary instruments in Malaysia. For this reason, it is important to test whether the Islamic monetary instruments can produce more stability than conventional monetary instruments. Therefore, this study attempts to test the following hypotheses:

i) That Islamic banks deposits (profit-sharing) are more stable than conventional deposits (interest-based),

ii) That the correlation between Islamic bank deposits and the monetary based demand function is stronger than that between conventional deposits and the monetary based demand function, and

iii) That the velocity of the Islamic bank deposits (profit-sharing) is more stable than the velocity of conventional deposits (interest-based).

1.5 RESEARCH METHODOLOGY

According to the research objective, an econometric model will be developed to explain the relationship between variables in the model.[1] The equations include the Islamic banks profit-sharing deposits equation, the conventional interest-based deposits equation, the equation to test the correlation between profit-sharing deposits and monetary base, the equation to test the correlation between interest-based deposits and monetary base, the equation of the velocity of the profit-sharing deposits, and the equation of the velocity of the interest-based deposits.

This model will have five behavioural equations and three identities. The deposit model for the Islamic banks deposits (profit-sharing) explains the behavioural and the important factor determinants of the money deposits in the Malaysia Islamic banking system, and the model for the conventional deposits (interest-based) explains the behavioural and the important factor determinants of the money deposits in the conventional Malaysian banking system.

---

[1] A model is a set of restrictions on the joint distribution of the dependent and independent variables. See Hayashi Fumio, *Econometrics*, Princeton University Press, Princeton: USA, 2000, p. 4.

The correlation between profit-sharing deposits and monetary base to test the correlation between money deposits profit-sharing with monetary base, and the correlation between interest-based deposits and monetary base to test the correlation between money deposits interest-based with monetary base, whereas, the velocity of the profit-sharing deposits and the interest-based money deposits are to test which money deposits are more stable by a comparison of both velocities of money.

The model is applied to the entire Malaysian banking industry, and it is hoped that this model will provide a satisfactory method for analysing the issues and questions that arise in this research.

In general this research can be divided into three principal parts:

1) Model development

This section will cover the model determination according to economic theory. The framework that has been used includes an interest-based deposits model, a profit-sharing (interest-free) deposits model, correlation between interest-based deposits with monetary base, correlation between profit-sharing (interest-free) money deposits with monetary base, a velocity of interest-based deposits model, and a velocity of profit-sharing (interest-free) deposits model as endogenous variables.

The interest-based money deposits model will be divided into two parts, since conventional demand deposits and conventional time deposits are both functions of explanatory variables, comprising the real gross domestic product, the nominal interest rate on money (RD and RT), the consumer price index and the dependent variables lagged for one year.

The profit-sharing (interest-free) money deposits model will be divided into three parts, namely, Islamic demand deposits, Islamic time deposits and Islamic investment deposits as functions of explanatory variables, including the real gross domestic product, the profit-sharing ratio (SPSD and SPST for Islamic demand deposits and Islamic time deposits, with IPS for Islamic investment deposits), the consumer price index, and the dependent variables lagged for one year.

The correlation between interest-based deposits and the monetary base is an equation to test the endogenous variables of the money deposits that earn interest which function as the monetary base. The correlation between profit-sharing (interest-free) deposits and the monetary base is an equation to test the endogenous variables of the money

deposited on the profit-sharing basis (interest-free) which functions as the monetary base.

The models of the interest-based velocity of money deposits and the profit-sharing (interest-free) velocity of money deposits are used to test which of the two types of money deposit is more stable in terms of velocity.

2) Parameter estimation

The parameters include interest-based money deposits, profit-sharing (interest-free) money deposits, the correlation of interest-based money deposits, the correlation of profit-sharing (interest-free) money deposits, the velocity of the interest-based money deposits, and the velocity of the profit-sharing (interest-free) money deposits, that will be estimated using the ordinary least square (OLS) econometric method.

3) Model assessment

The assessment of the model will be carried out before the findings are applied for the purposes of policy implication in the Malaysian banking industry. In this context, several statistical methods may be used. This study will use the *Root Mean Square Error* (RMSE) method, and the *Root Means Squared Percentage Error* (RMSPE) method, and *Theil's test of inequality coefficient* (U statistics) will also be incorporated. In addition, a historical simulation will also be applied to the both the models to check which model is more accurate and useful for the purposes of policy making.

1.6 IMPORTANCE OF THE RESEARCH

At present it is important to study the Malaysian banking system since it is one of the few examples of a dual banking system. This research will study and analyse the effectiveness of Islamic monetary instruments compared with that of conventional monetary instruments in Malaysia. In Malaysia, there exists today a fully-fledged Islamic banking system, i.e., Bank Islam Malaysia Berhad and the Bank of Muamalat Malaysia Berhad, operating in parallel with a sophisticated conventional banking system, and all commercial banks offer both types of banking instruments simultaneously.

1.7 SCOPE OF THE RESEARCH

This research covers the Malaysian banking industry for the period from 1983 until 2001. The aggregate yearly time series data will be used to explain the main factors which are affecting by the interest-based and profit-sharing (interest-free) money deposits in the Malaysian banking system. In addition, this study will also discuss government policy with regard to Malaysian banking.

Yearly data have also been used to provide a realistic view of what has really happened in the Malaysian banking industry. For example, acceptance of the people's view of the Islamic banking instruments in Malaysia, the changing movement of depositors in general from conventional banks to Islamic banks, and government policy regarding these two monetary instruments at present and in the future in Malaysia.

By using the aggregate time series yearly data it is possible to explain the changing demands of the economy and government policy. Accordingly, it is hoped that by using aggregate time series yearly data it will be possible to explain what has really happened in the Malaysian banking sector and to determine the effect of overall government policy on the Malaysian economy. In addition, it is hoped that the study will reveal which monetary instruments play the most important role in the Malaysian banking sector and in the economy as a whole.

1.8 ORGANISATION OF THE RESEARCH

This study will be divided into seven chapters. Chapter I, as the introductory chapter, has introduced and discussed the statement of the problem, the objective of the research, the research hypotheses and the research methodology. In addition, the importance of the research, the scope, and the organisation of the research have also been discussed. Chapter II will discuss macroeconomic performance and policy in Malaysia, which may directly or indirectly affect the performance and growth of Islamic bank and conventional bank deposits.

Chapter III will attempt to define the main characteristics and the various instruments of the conventional banking system in Malaysia, the importance of Bank Negara Malaysia, and government policy regarding Malaysian monetary development, the main factors behind the increasing deposits in the Malaysian banking sector, and the effect of government policy on the Malaysian economy as a whole.

Chapter IV will focus on the principal characteristics and the various instruments of the Islamic banking system in Malaysia, an on the importance of Bank Islam Malaysia Berhad as a foundation for the development of Islamic monetary economics and Islamic monetary instruments in Malaysia. It will also cover the various Islamic monetary instruments that are being used by Bank Islam Malaysia Berhad and the other commercial banks. In addition, the impact of Islamic financial instruments on the Malaysian economy as a whole will be reviewed in general terms.

In Chapter V, previous research will be documented and analysed, in particular that dealing with issues relating to the development of the econometric model of the interest-based and profit-sharing (interest-free) money deposits in Malaysia, and the model development specification in this research.

In Chapter VI the empirical results of the research will be examined, and the research hypotheses will be assessed. This chapter will also be provided about the simulation result. Chapter VII will provide the summarisation of the result, and the implications for policy. This chapter will conclude by providing some suggestions for future research.

CHAPTER TWO

MACROECONOMIC PERFORMANCE AND POLICY IN MALAYSIA

2.1 INTRODUCTION

The purpose of this chapter is to examine Malaysian macroeconomic performance and policy. It is envisaged that, in an environment where both Islamic and conventional banks operate side by side, the deposits of Islamic and conventional banks are likely to be affected by the level of macroeconomic performance and policy.

It is therefore important to explain certain aspects of macroeconomics that are related to sustaining economic growth and the stability of the economy. In addition, this issue has been highlighted in order to able to offer an assessment of the performance of the Central Bank of Malaysia (Bank Negara Malaysia) and its monetary policy in chapter three. The chapter appears to deal with economic performance, government policy, and changes in economic structure (dealt with later in the chapter) in Malaysia from the 1970s until the end of the 1990s. The degree of macroeconomic performance at the time when Bank Islam Malaysia Berhad was established will also be discussed.

The assessment of the role of the deposits in the performance of both the Islamic and the conventional banks performance in the chapter four will also take into account the recessionary climate of the mid-1980s during the economic crisis and the period after the crisis in 1997.

2.2 A BACKGROUND PERSPECTIVE ON THE ECONOMY

Malaysia has a small, open economy,[1] and a population of 23 million. In view of the openness of the economy, Malaysia is vulnerable to global economic cycles. A combination of fiscal and monetary measures implemented in a flexible and pragmatic manner and the structural adjustments undertaken have enabled Malaysia to adapt to the changing environment. This willingness to adjust and adapt to the changing international and domestic economic situation has underscored Malaysia's policy response and allowed the economy to remain competitive in the world market.

---

[1] This means that the country has a small domestic market and is a trading nation, however, it has always adopted one of the most open policies in Asia.

The maintenance of an open and liberal trading regime, sound macroeconomic management to address internal and external imbalances and the longer-term adjustment policies to address supply-side rigidities has enabled Malaysia to achieve rapid economic growth over the past four decades, with macroeconomic stability and social progress. There has been a combination of market-oriented reforms implemented within the context of a series of five-year plans for the development of the Malaysian economy. Malaysia has made significant progress towards the transformation of its economy from one characterized by agricultural production and mining to one driven by manufacturing and services. The pro-business stances of the government and its commitment to the implementation of the five-year plans and development policies have encouraged foreign direct investment and the private sector to be the main engines of growth in the Malaysian economy.

2.3 MACROECONOMIC PERFORMANCE AND POLICY IN MALAYSIA, 1970-2000

The economy recorded an average growth rate of 5.9 per cent per annum during the 1983-2000 periods, as shown in Table 2.2. The real GDP expanded at an average rate of 8.7 per cent per annum during the 1987-1997 period, as illustrated in Table 2.5, before registering a negative growth rate of 7.5 per cent in 1998, as a result of the Malaysian financial crisis. These increases in real GDP growth rate caused the GDP at current prices to increase from RM165.2 billion in 1993 to RM339.4 billion in 2001. On the other hand, the deposits of Islamic banks and conventional banks also increased during that time from RM1.6 billion to RM38.4 billion for Islamic banks and from RM97.9 billion to RM169.6 billion for conventional banks.

However, after the 1997 crisis, the growth of conventional deposits and Islamic banks deposits slowed down: for example, the growth in conventional demand deposits was only 1.4 per cent during the 1996 to 1997 period. Efforts to resuscitate the economy, starting in mid-1998, succeeded in generating an average growth rate of 7.2 per cent during the 1999-2000 period, as shown in Table 2.3. Per capita income in current terms, which declined in 1998, rebounded up to RM13,359 in 2000 (see Table 2.7), surpassing the pre-crisis level.[2]

The fiscal and monetary policies introduced in 1998 helped to stimulate consumption, while containing inflationary pressures. The unemployment rate remained at an average 3.1 per cent during the 1991-2000 period, as shown in Table 2.5.

---

[2] Government of Malaysia, *Malaysian Trade*, www.matrade.gov.my/economy-trade/key-indicators.htm/. (4th October, 2003)

The financial position of the government, however, recorded a deficit arising from the expansionary fiscal policy to stimulate the economy and counteract the contraction of private demand. Nevertheless, the expansionary policy adopted by the government was a supportive factor in increasing the deposits in the Malaysian banking industry, both before and after the crisis.

2.3.1 The New Economic Policy (1971-1990)

In 1971, Malaysia adopted the "New Economic Policy (1971-1990)", an affirmative action programme aimed at improving the relative economic status of the politically dominant but economically disadvantaged Malay community. NEP targets included the reduction of poverty and the "restructuring of society" to provide Malays with more attractive jobs and greater participation in the ownership and control of wealth.

Following the racial crisis on 13th May 1969, the government of Malaysia undertook serious measures to ensure national unity among the major communities (i.e., Malays, Chinese, Indian and other indigenous *bumiputras*). The riots of 13th May 1969 resulted in a very clear shift in government development strategy. The government steered its development strategy away from policy making based purely on economic considerations towards an affirmative action policy based on ethnicity.

The weaknesses of the past policy and constitutional arrangements were recognized, despite the growth in terms of income. The disparities in the distribution of the national income were evident in the wide differences of income between Malays and non-Malays, as shown in Table 2.1.

Table 2.1
Malaysia: Mean monthly gross household income by ethnic group, 1970-2005
(in Ringgit)

Ethnic Group	1970	1973	1976	1980	1990	1995	1999	2005[f]
Malay	172	209	237	348	940	1,604	1,984	2,380
Chinese	394	461	540	642	1,631	2,890	3,456	4,100
Indian	304	352	369	469	1,209	2,140	2,702	3,260
Others	81	1,121	870	905	955	1,284	1,371	1,505
Malaysia	n.a.	n.a.	n.a.	n.a.	n.a.	2,020	2,472	2,925

n.a. = not available.
f = forecast.
Sources: Compiled by the author using data from the *Third Malaysia Plan*, 1971-1975, *Sixth Malaysia Plan*, 1991-1995, *Seventh Malaysia Plan*, 1996-2000, and *Eighth Malaysia Plan*, 2001-2005.
Compiled by author from http://www.epu.jpm.my/new%20folder/opp3/cont_chap4.pdf/, *Building a United and Equitable Society*, Economic Planning Unit, Prime Minister's Department, Putra Jaya, Malaysia.

Table 2.1 shows that the mean monthly income of a Malay household in 1970 was RM172, compared with RM394 in the case of a Chinese and RM304 in the case of an Indian household. From the table, we can see that the mean monthly income for all ethnic groups in Malaysia increased year by year: for example, in 1980, the mean monthly income of a Malay household was RM348, which increased to RM940 in 1990 and continued to increase until the end of the New Economic Policy (NEP), whereas the mean monthly income of a Chinese household increased to RM1,631, and the mean monthly income of an Indian household increased to RM1,209. Moreover, the mean monthly income of a Malay household increased to RM1,984 in 1999, compared with RM3,456 and RM2,702 in the case of Chinese and Indian households respectively.

The important fact to be noted here is that the achievement of government policy under the New Economic Policy (First Outline Perspective Plan, covering the period 1971-1990) and under the National Development Policy (Second Outline Perspective Plan, covering the period 1991-2000) was reflected in substantial increases in the deposits in both Islamic and conventional banks. Tables 2.2 and 2.3 show that increasing the mean household income, for example, from RM2,020 in 1995 to RM2,472 in 1999, resulted in an increase in the deposits in Islamic banks from RM3,829.9 in 1995 to RM24,500.8 in 1999, and in conventional banks deposits from RM112,720.6 in 1995 to RM159,747.2 in 1999. It is, however, likely that most of the increases in Islamic bank deposits reflected the fact that more institutions had began to provide these facilities, rather than simply being the result of increased growth. Increased growth in the *Bumiputra* is likely to have a more significant impact on Islamic bank deposits than increased growth in the income of Chinese households.

2.3.2 Economic structure

As already stated above, a significant characteristic of the Malaysian economy is its open and free-market orientation. Exports play a dominant role in the Malaysian economy and are traditionally the most important determinant of the state of the economy in the medium and long term. In fact, exports of goods and services accounted for 70.7 per cent of gross national product (GNP) in 1999, compared to 54 per cent in 1980.[3]

The traditional dependence on the export sector may be attributed to several factors, namely, the abundance of natural resources (i.e., timber and rubber) and the support

[3] Economic Planning Unit, The *Third Outline Perspective Plan, 2001-2010*, Percetakan Nasional Malaysia Berhad, Kuala Lumpur: Malaysia, 2001, pp. 68-69.

provided by favourable prices and a world demand for primary commodities in the late 1960s and 1970s. In addition to that Malaysia has a small domestic market. It is thus not surprising that structural changes in the Malaysian economy over the 40 years since independence have been largely tailored to suit the context of this open economy, with an emphasis on the export of manufactured goods, based initially on competitive wage rates and a legal system that protected the property rights of foreign direct investors.

2.3.2.1 Malaysia's economic development

Malaysia's economic development and its relationship with the growth in deposits in Islamic and conventional banks may be discussed under three main headings, i.e., economic growth and its relationship to gross domestic product (GDP), the situation regarding foreign direct investment (FDI), and the situation regarding exports performance and the stability in the consumer price index (CPI).

(a) Economic growth

Table 2.2 shows the annual growth of Malaysia's GDP. Compared with most other economies, the growth record of the Malaysian economy over the past three decades (with the exception of the mid-1980s and the period after 1997) has been generally rapid and impressive. The average annual growth rate of real GDP was 4.9 per cent between 1961 and 1970, with an average 8.3 per cent growth rate per annum recorded during the 1970s.

Table 2.2
Comparison of the growth rates of GDP at constant prices, 1961-2000 (per cent per annum)

Year	1961-1970 % per annum	1971-1980 % per annum	1981-1990 % per annum	1991-2000 % per annum
1	1.4	10.0	6.9	9.5
2	6.9	9.4	6.0	8.9
3	5.5	11.7	6.2	9.9
4	5.8	8.3	7.8	9.2
5	5.6	0.8	-1.1	9.8
6	6.2	11.6	1.2	10.0
7	1.0	7.8	5.4	7.5
8	4.2	6.7	9.9	-7.5
9	10.4	9.3	9.1	4.3
10	5.0	7.4	9.0	5.2
Average	4.9	8.3	6.0	6.7
1988-2000				9.5

Sources: Compiled by the author using data from the *Monthly Statistical Bulletin*, Central Bank of Malaysia. (Various issues)

From Table 2.2, it can be seen that similar high rates of annual domestic growth were also recorded for the 1980s and 1990s, with average annual growth rates of 6.0 and 6.7 per cent respectively. The second highest annual growth rate for GDP achieved in the history of Malaysia was in 1996, when it was exactly 10.00 per cent. However, real GDP growth for 1998 contracted by 7.5 per cent as part of the economic crisis, which began in mid-1997. In addition, during the 1988-1997 period, the economy grew at an average annual rate of 9.3 per cent, as shown in Table 2.2.

The size of the country's gross domestic product (GDP) increased from RM70,444 million in 1983 to RM77,470 million in 1985, and both the Islamic and conventional bank deposits also increased, as shown in Table 2.3. However, real GDP growth for 1985 contracted by 1.1 per cent as part of the fall in world commodity prices, which began in 1985. During this time, increases in conventional bank deposits were smaller than those in Islamic bank deposits. The overall increase in Islamic bank deposits was approximately 14.7 per cent, compared to only 5.8 per cent in conventional deposits.

Table 2.3
The GDP, GDP growth rate and deposits in Islamic and conventional banks (RM million)

Year	Gross Domestic Product	Conventional Demand Deposits	Conventional Time Deposits	Islamic Demand Deposits	Islamic Time Deposits	Islamic Investment Deposits	GDP Growth (%)
1983	70,444.0	9,449.7	18,865.3	85.0	125.0	254.0	6.2
1984	79,550.0	10,311.3	20,779.4	127.1	195.1	331.1	7.8
1985	77,470.0	11,900.5	22,551.8	139.5	250.3	365.0	-1.1
1986	71,584.0	12,666.7	23,773.3	168.2	290.7	406.5	1.2
1987	79,625.0	16,466.6	25,919.4	189.2	317.3	515.2	5.4
1988	90,861.0	18,814.9	28,931.0	213.7	342.2	652.7	9.9
1989	102,582.0	20,610.1	39,772.2	221.2	350.3	667.1	9.1
1990	115,828.0	21,196.8	43,549.0	231.8	275.3	672.6	9.0
1991	129,559.0	23,850.9	51,742.2	236.1	322.6	687.1	9.5
1992	147,784.0	24,527.1	58,411.6	341.2	334.3	667.8	8.9
1993	165,206.0	32,772.8	65,196.9	421.1	407.5	784.3	9.9
1994	190,274.0	37,002.2	68,732.1	1,425.9	1,491.0	1,673.2	9.2
1995	218,671.0	38,410.0	74,310.6	1,303.9	1,347.6	1,178.4	9.8
1996	249,503.0	49,442.6	95,130.5	1,720.9	1,796.8	4,525.9	10.0
1997	275,367.0	51,464.4	102,461.3	1,875.8	2,114.2	4,865.5	7.5
1998	278,724.0	53,272.0	103,860.9	2,368.4	4,572.3	6,732.8	-7.5
1999	286,974.0	55,162.1	104,585.1	2,959.7	5,673.6	15,867.5	4.3
2000	339,420.0	59,042.5	106,325.7	4,560.4	6,763.4	19,929.8	5.2
2001	341,205.0	62,107.8	107,531.4	5,380.7	7,307.7	25,676.3	3.1

Sources: Compiled by the author using data from the *Monthly Statistical Bulletin*, Central Bank of Malaysia. (Various issues)
Compiled by the author using data from the *Central Bank and the Financial System in Malaysia-A Decade of Change, 1989-1999*, Central Bank of Malaysia, 1999, pp. 610-662.

In 1998, real GDP contracted by 7.5 per cent and the growth in Islamic bank deposits was 79.1 per cent, which was again higher than in those of conventional banks. However, this may have been due to the emergence of the new Islamic banks, namely

Bank Muamalat Malaysia Berhad, the second Islamic bank, and an increase in the number of conventional banks providing Islamic windows.

There seems to be no correlation between Islamic bank deposits and the growth in gross domestic product (GDP). However, Table 2.3 also shows that with the increases in Malaysia's gross domestic product (GDP), the Islamic and conventional banks deposits also increased. The issue to be considered here is the extent to which Islamic bank deposit growth was helped by the policies that favoured the *Bumiputra*, especially the creation of job opportunities for women and men in public services departments. On the other hand, it may simply have been due to the establishment of the new institutions and the creation of the second Islamic bank, Bank Muamalat Malaysia Berhad, in 1999.

(b) Economic growth and FDI

Foreign direct investment (FDI) was undoubtedly the driving force behind the expansion in manufactured exports in Malaysia, especially after the 1980s. Therefore, Malaysia continues to promote FDI, but has discouraged destabilizing short-term capital flows, especially since the Asian financial crisis. FDI flows to Malaysia have grown remarkably over the past two decades. There has been a boom in the amount of FDI coming into the country, particularly between 1994 and 1996, as shown in Table 2.4.

Table 2.4
Foreign direct investment, Islamic banks and conventional banks deposits (RM million)

Year	Conventional Banks Deposits Total	Foreign Direct Investment	Islamic Banks Deposits Total
1991	75,593.1	8,776	1,245.8
1992	82,938.7	14,195	1,343.3
1993	97,969.7	17,474	1,612.9
1994	105,734.3	28,873	4,590.1
1995	112,720.6	26,874	3,829.9
1996	144,573.1	31,081	8,043.6
1997	153,925.7	13,422	8,855.5
1998	157,132.9	12,672	6,732.8
1999	159,747.2	11,473	24,500.8
2000	165,368.2	14,292	31,253.6

Sources: Compiled by the author using data from the *Monthly Statistical Bulletin*, Central Bank of Malaysia. (Various issues)
Compiled by the author using data from the *White Paper Status of the Malaysian Economy*, Percetakan Nasional Malaysia Berhad, Government of Malaysia, 1999, p. 45.

For example, FDI coming in to Malaysia was approximately RM28.9 billion in 1994, increasing to a peak equal to RM31.1 billion in 1996. During this time also, we can see

that deposits in conventional banks increased from RM105.7 billion and RM144.6 billion, and that those in Islamic banks increased from RM4.6 billion to RM8.0 billion.

Since 1991, the volume of FDI flowing into Malaysia has remained high, and these FDI inflows have decisively shifted the Malaysian economy from production for the domestic market to using Malaysia as a manufacturing base for the global market. However, there are two issues that need to be raised with respect to FDI in Malaysia, especially in the manufacturing sector. First, Malaysia has chosen to rely more on foreign investment than on importing technology for domestic firms. This may be disadvantageous in the longer run, since FDI probably stimulates less local learning than does the importation and adaptation of technology. As education levels rise in Malaysia, the capacity to absorb and develop new technologies will undoubtedly evolve. However, FDI refers to private long-term capital flows which are intended to acquire a significant interest in an enterprise with the objective of being directly involved in its management. The government recognises that FDI has brought benefits in terms of transfer of technology and management expertise, employment creation, new product development, trade generation and access to new markets, besides being an important source of capital.

A second set of issues surrounding FDI concerns the capital intensity of production. Doubts are commonly expressed about the extent to which multinationals adapt their technologies to local conditions, and to more labour intensive processes in particular; moreover, if foreign employers tend to pay higher wages, this could both place upward pressure on domestic wages and sustain capital intensive processes among foreign producers themselves. FDI is, on average, more capital intensive than domestically owned manufacturing.

On the other hand, in the 1970s and 1980s, Malaysia promoted FDI inflows which were assembly-type and labour-intensive, but in the 1990s favoured FDI which was capital-intensive and high-tech. The government also ensures that newly established domestic industries which have potential are not exposed to unfair competition and that the employment and equity objectives under the New Economic Policy and the National Development Policy[4] are not jeopardized.[5]

---

[4] The National Development Policy (NDP) was launched in 1991 to replace the New Economic Policy (NEP). The NDP, which was implemented over the decade 1991-2000, aimed to bring about a more balanced development. The basic policies of the NEP have been maintained since the experiences of the last twenty years have shown that growth combined with effective government policies for poverty eradication and restructuring contributed significantly towards the substantial improvement in income distribution and the reduction of the ethnic imbalances in the country.

[5] Government of Malaysia, *White Paper Status of the Malaysian Economy*, Percetakan Nasional Malaysia Berhad, Kuala Lumpur: Malaysia, 1999, pp. 44 – 45.

During 1992 and 1994, Malaysia witnessed a rapid inflow of short-term portfolio capital principally motivated by the large interest rate differential, the expectations of *Ringgit* depreciation, the bullish stock market and strong economic fundamentals. Aware of the dangers associated with the rapid build-up in short-term capital flows, in 1994 the government introduced several administrative measures which were partially successful in dealing with the problem.

The 1997 and 1998 crisis witnessed the rapid outflow of short-term portfolio capital, which severely destabilized the financial market as well as adversely affecting economic growth. During the period between 1997 and 1999, FDI declined from RM13,422 million to RM11,473 million and Islamic bank deposits declined from RM8,855.5 million in 1997 to RM6,732.8 million in 1998. However, conventional bank deposits increased during that time, but at a slower rate, from RM153,925.7 million in 1997 to RM159,747.2 million in 1999. Nevertheless, during the period July-December 1997, Malaysia witnessed a net short-term portfolio capital outflow of RM22.2 billion. In 1998, the situation began to stabilise, with a net short-term portfolio capital outflow of RM3.5 billion in the first half and of RM4.6 billion in the second half of the year.[6]

The decline in FDI affected the Islamic bank deposits more severely than those of conventional banks for two main reasons: first, the decline in *Bumiputra* (especially Muslim) capital and deposits due to the financial crisis in mid-1997, during which many *Bumiputra* Muslim corporate institutions and businesses went bankrupt; secondly, during the financial crisis, *Bumiputra* Muslims lost their jobs, because many factories closed down. Both the above factors adversely affected the deposits in Islamic banks since most of the depositors in Islamic banks are from the *Bumiputra* Muslim community.

(c) Economic growth, employment and price stability

Generally speaking, since the 1970s and 1980s, Malaysia has enjoyed relative stability in domestic prices. The rate of inflation averaged only 3.2 per cent per annum between 1970 and 1990. The adoption of a sound macroeconomic policy mix kept inflationary pressures in check. Figure 2.1 shows that the rate of inflation averaged 3.4 per cent in the period 1998 to 2000. The rate of inflation in 1998 was 5.3 per cent, the highest since 1982. The major contributor to this rise was the sharp depreciation of the

---

[6] Central Bank of Malaysia, *Monthly Statistical Bulletin*, Bank Negara Malaysia, Kuala Lumpur: Malaysia, 1999, pp. 33-35.

Ringgit, with all categories of consumer items recording price increases, particularly food, which accounted for 63 per cent of the increase in the consumer price index (CPI).[7]

Table 2.5
Labour force and employment in Malaysia, 1985-2001

Year	Labour Force	Total Employment	Unemployment Rate (%)	Annual GDP Growth Rate (%)
1985	6,039	5,625	6.9	-1.1
1986	6,222	5,707	8.8	1.2
1987	6,457	5,984	7.3	5.4
1988	6,658	6,176	6.3	9.9
1989	6,850	6,390	5.1	9.1
1990	7,042	6,686	5.1	9.0
1991	7,204	6,891	4.3	9.5
1992	7,370	7,096	3.7	8.9
1993	7,627	7,396	3.0	9.9
1994	7,834	7,618	2.9	9.2
1995	8,140	7,915	2.8	9.8
1996	8,327	8,161	2.5	10.0
1997	8,607	8,390	2.7	7.5
1998	8,881	8,538	3.9	-7.5
1999	9,121	8,794	3.6	4.3
2000	9,347	9,061	3.1	5.2
2001	9,586	9,312	3.7	3.1

Sources: Compiled by the author using data from the *Economic Report*, Government Printers, Ministry of Finance, Kuala Lumpur: Malaysia. (Various issues)

Table 2.5 shows that between 1988 and 1997, unemployment was relatively low due to rapid economic growth. However, the unemployment rate reached a peak of about 8 per cent during the recession period of 1985-1986. The rapid economic growth at the beginning of the 1990s and prior to the crisis generated a rapid growth in jobs and the attainment of full employment in the economy. During the 1990 to 1997 period, the labour market remained tight, with shortages of workers reported in the agriculture, manufacturing and services sectors. To offset the labour shortage, migrant labour, consisting mainly of Indonesians, Bangladeshis, Filipinos and, to a lesser extent, workers from Myanmar, was imported.[8] However, with the contraction of the economy in 1998, unemployment increased slightly to 3.9 per cent from 2.5 per cent in 1996[9], as shown in Table 2.5. The unemployment situation was moderated by the absorption of redundant workers by sectors facing labour shortages. In addition, the return of migrant labourers to their respective countries also helped to keep the unemployment rate at a

---

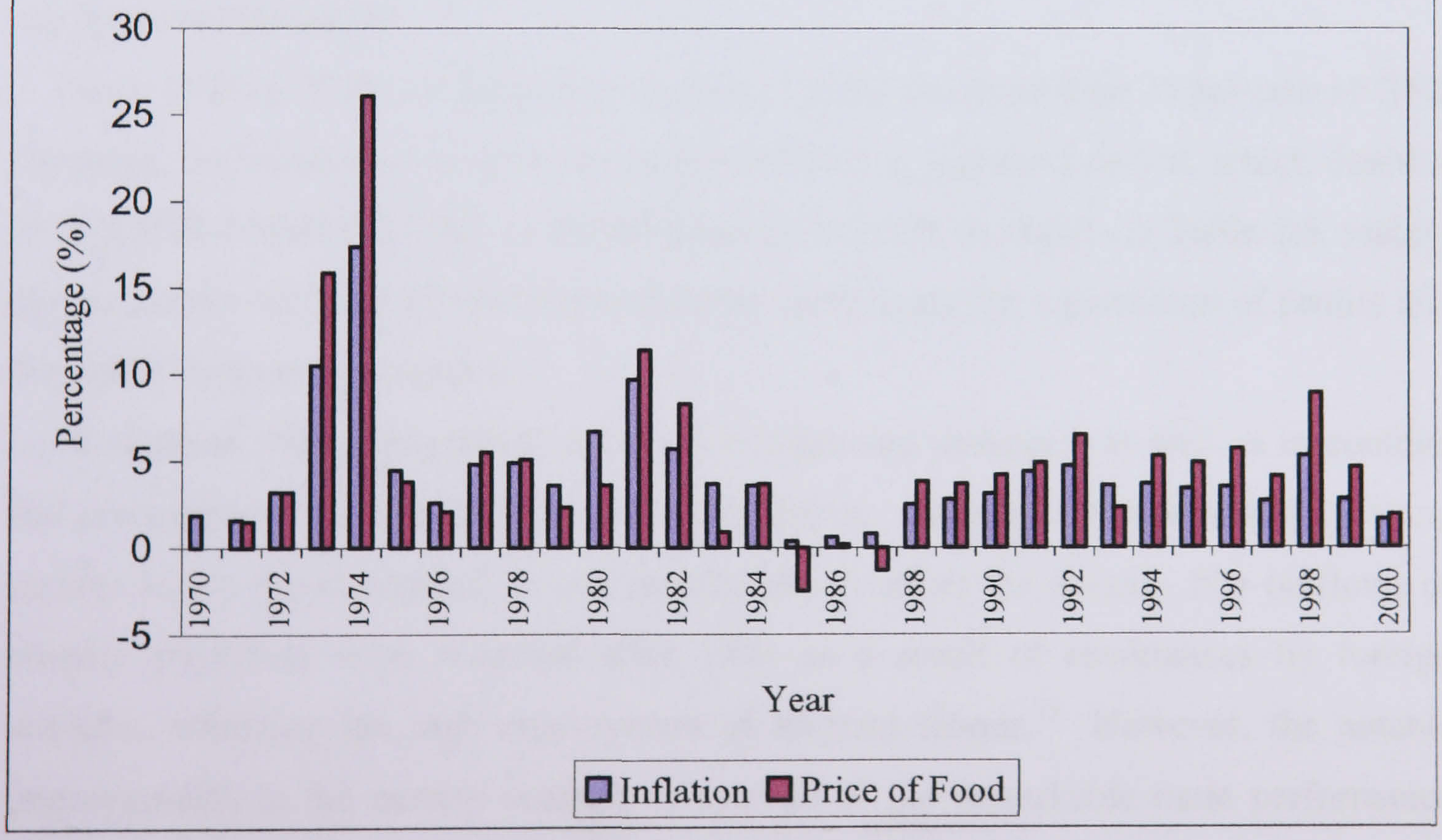
[7] Economic Planning Unit, *Eighth Malaysia Plan, 2001-2005*, Percetakan Nasional Malaysia Berhad, Kuala Lumpur: Malaysia, 2001, p. 37.
[8] Singapore Institute of International Affairs, *Migrant Labour in Malaysia*, www.siiaonline.org/eadn/Migrant%20Labour%Labour%20in%20Malaysia/. (4th October, 2003)
[9] Ibid., p. 6.

low level. The economic recovery during the 1999-2000 period contributed towards employment creation, thus lowering the unemployment rate to 3.1 per cent.

During the 1991-1995 period, the economy continued to achieve strong growth and price stability was maintained. The inflation rate, as measured by the consumer price index (CPI), was contained at an average of 4.0 per cent, through a comprehensive anti-inflationary package comprising monetary, fiscal and administrative measures. A tight monetary policy was introduced to dampen aggregate demand by managing excess liquidity in the market. The government adopted a prudent fiscal policy by restraining operating expenditure, while development expenditure focused on projects that would alleviate infrastructure and supply constraints.[10]

After experiencing stable and low prices during the 1990-1997 period, inflation became a concern in 1998 following the sharp depreciation of the *Ringgit*, which led to higher consumer and producer prices. The CPI rose from 2.7 per cent in 1997 to a peak of 5.3 per cent in 1998,[11] as shown in Figure 2.1, this increase being due to increases in food prices, which, as indicated above (see top of p. 16), accounted for 63 per cent of the increase in the CPI.

Figure 2.1
Inflation and price of food in Malaysia, 1970-2000



Source: Compiled by the author using data from the *Monthly Statistical Bulletin*, Central Bank of Malaysia, 2001, p. 100.

---

[10] Economic Planning Unit, The *Seventh Malaysia Plan 1996-2000*, www.epu.jpm.my/Bi/dev_plan/7MP/. (5th October, 2003)
[11] Ibid., p. 6.

Finally, we can say that along with economic stability, openness to foreign trade and investment, price stability, increases in employment (decreasing unemployment) and the rapid accumulation of assets have all played key and interdependent roles in promoting Malaysia's transformation from a relatively poor, predominantly agrarian developing country in 1970, to an upper middle income, newly industrialised economy, giving Malaysians a reasonable income. As a result, higher savings have helped to increase Islamic and conventional banks deposits.

(d) Economic growth and exports

Table 2.6 illustrates how the balance of trade position strengthened in the 1970s following significant growth in merchandise exports. The growth rate of merchandise exports peaked in 1979 at 42.1 per cent, while the growth rate of merchandise imports was more modest, at 29.5 per cent for the same year.

The balance of trade account was in surplus throughout the 1970-1980 period, with the largest surplus of RM6,908 million recorded in 1979. From 1970 to 1980, the balance of trade surplus accounted for more than 15 per cent of gross national product (GNP). From 1981 to 1982, however, the balance of trade position returned to deficit, but improved thereafter.

From 1998 to 2000, the balance of trade accounted for more than 25 per cent of GNP. However, the balance of services account continued to register a deficit, which doubled from RM19.2 billion in 1995 to RM40.6 billion in 2000, as shown in Table 2.6, mainly due to the net outflows of investment income comprising the repatriation of profits and dividends by foreign investors.[12]

In addition, higher payments in freight charges and insurance as well as in contract and professional fees also contributed to this deficit. Although there was an increasing surplus in the travel account, it was insufficient to offset the deficit. Net outflows of transfer payments were recorded after 1994 as a result of remittances by foreign workers, reflecting the high employment of migrant labour.[13] However, the notable improvements in the current account as a result of the remarkable trade performance compensated for the services deficit, as well as the net transfer payments. Consequently, the current account balance, which had been in deficit in 1990, turned positive starting

---

[12] Economic Planning Unit, *Eighth Malaysia Plan, 2001-2005*, Percetakan Nasional Malaysia Berhad, Kuala Lumpur: Malaysia, 2001, p. 31.
[13] Ibid., pp. 35-37.

in 1998 and recorded its highest surplus of RM47.9 billion in 1999, or 17.1 per cent of GNP.

Table 2.6
Malaysia's balance of payments 1970-2000 (RM million)

Year	Balance of Trade	Exports	Imports	Balance of Services	Current Account Balance	Balance of Capital	Total Balance
1970	1,967	5,020	3,953	-862	+25	313	68
1971	686	4,884	4,193	-878	-329	686	203
1972	365	4,736	4,371	-906	-698	1,193	389
1973	1,594	7,263	5,669	-1,197	+246	582	576
1974	540	10,022	9,482	-1,743	-1,307	1,579	452
1975	614	9,057	8,443	-1,722	-1,187	1,693	171
1976	3,722	13,330	9,608	-2,148	+1,474	1,619	2,054
1977	3,738	14,854	11,116	-2,586	+1,074	1,569	755
1978	3,690	16,932	13,242	-3,337	+249	1,587	625
1979	6,908	24,060	17,152	-4,858	+2,033	2,055	1,789
1980	5,238	18,013	22,775	-5,813	-620	2,213	1,002
1981	-243	26,900	27,143	-5,312	-5,633	5,431	-1,093
1982	-1,758	27,946	29,704	-6,576	-8,409	8,432	-614
1983	1,002	31,762	30,760	-9,098	-8,117	9,210	-55
1984	6,966	38,452	31,466	-10,813	-3,917	6,560	312
1985	8,883	37,576	28,693	-10,391	-1,522	4,229	3,209
1986	8,378	34,970	26,592	-8,790	-316	3,386	4,345
1987	14,703	44,733	30,030	-8,409	+6,642	-1,406	2,893
1988	14,524	54,607	40,083	-10,180	+4,739	-3,218	-1,104
1989	11,871	66,727	54,856	-11,392	+698	2,060	3,332
1990	7,093	77,458	70,365	-9,723	-2,483	3,473	5,365
1991	1,449	92,220	90,771	-13,195	-11,644	10,331	3,427
1992	8,599	100,910	92,311	-13,611	-4,675	10,328	16,744
1993	8,193	118,336	110,173	-14,951	-6,349	14,415	29,239
1994	4,460	153,921	155,921	17,005	-14,770	11,659	-8,262
1995	97	184,987	194,345	-19,229	-21,647	16,611	-4,403
1996	10,154	197,026	197,280	-19,414	-12,196	13,525	6,245
1997	11,337	220,890	220,936	-21,972	-14,153	19,095	-10,892
1998	69,322	286,756	228,309	-23,381	+36,068	10,627	40,301
1999	86,535	318,946	232,411	-32,134	+47,902	12,598	17,819
2000	79,522	372,778	293,256	-40,624	+31,163	12,658	18,045

Sources: Compiled by the author using data from the *Economic Report*, Government Printers, Ministry of Finance, Kuala Lumpur: Malaysia. (Various issues)
Compiled by the author using data from the *Monthly Statistical Bulletin*, Central Bank of Malaysia. (Various issues)

Table 2.6 shows that Malaysia's balance of trade and total balance were almost always in a positive position, except for a few years, i.e., in 1981-1982, 1994-1995 and 1997. The positive position of the balance of trade and the total balance facilitated Malaysia's success in raising GNP, per capita income and gross national savings. Hence there was a link with the increase in deposits in Islamic and conventional banks in Malaysia, as shown in Table 2.7.

Table 2.7
GNP per capita income, gross national savings and Islamic and conventional banks deposits (RM million)

Year	Per Capita Income	Conventional Banks Deposits	Islamic Banks Deposits	Gross National Savings	Savings as Per Cent (%) of GNP
1993	8,024	97,969.7	1,612.9	54,534	34.7
1994	8,996	105,754.3	4,590.1	62,133	34.4
1995	10,068	112,720.6	4,629.9	73,448	35.3
1996	11,228	144,573.1	8,043.6	91,572	38.5
1997	12,051	153,925.7	8,855.5	102,807	39.5
1998	11,835	157,132.9	13,673.5	108,075	39.4
1999	13,125	159,747.2	24,500.8	109,132	41.2
2000	13,359	165,368.2	31,253.6	110,085	40.3
2001	13,884	169,639.2	38,364.7	111,271	40.5

Sources: Compiled by the author using data from the *Monthly Statistical Bulletin*, Central Bank of Malaysia. (Various issues)
Compiled by the author using data from the *White Paper Status of the Malaysian Economy, 1999*, Percetakan Nasional Malaysia Berhad, Government of Malaysia, p. 5.

Table 2.7 shows that Malaysia's per capita income consistently increased, except for the year 1998 following the financial crisis which began in mid-1997, when it fell to RM11,835. Table 2.7 also indicates that when per capita income increases, gross national savings also increase. This situation caused deposits in Islamic and conventional banks to increase as well, however, deposits in Islamic banks increased in 1998 to RM13,673.5 million from RM8,855.5 million in 1997, after the financial crisis.

Table 2.7 also suggests that, however, there is only a limited correlation between per capita income growth and gross national savings growth, and Islamic bank deposits. There is a closer correlation between per capita income growth and gross national savings growth, and conventional bank deposits.

(e) Economic growth and women

Generally speaking, in the 1980s and again since 2000, Malaysia experienced an economic boom, especially since 1988. The high growth of the economy has been achieved while maintaining price stability, and since 1995 there has been full employment. The strong growth performance resulted in fundamental structural changes in the economy. There were, therefore, accompanying changes in the composition of the employed population, and women's participation in the growing economy, and especially in the manufacturing sector, was noteworthy. The role of women in Malaysia's economy is shown in Table 2.8 below.

Table 2.8
Labour force and female employment figures in Malaysia (Million persons)

Year	Labour force	Total employment	Women (%)	Total women employment
1980	4,030	3,612	40.3	1,456
1985	6,039	5,625	41.8	2,351
1990	7,042	6,686	42.6	2,848
1995	8,140	7,915	43.0	3,403
2000	9,374	9,061	44.5	4,032
2005*	11,162	10,822	46.2	4,999

Note: * Estimated.

Source: Compiled by the author using data from the *Sixth Malaysia Plan*, 1991-1995, *Seventh Malaysia Plan*, 1996-2000, and *Eighth Malaysia Plan*, 2001-2005.

Table 2.8 illustrates the importance of women in the Malaysian workforce, as we can see that total female employment was 1,456 million in 1980, increasing to 4,032 million in 2000, out of a the total employment figure of 3,612 million in 1980 and 9,061 million in 2000. This indicates that women play a significant role in Malaysia's economy, accounting for 40.3 per cent of total employment in 1980, increasing to 44.5 per cent in 2000. The table thus suggests the importance of Malaysian women in economic development, as a result of which government of Malaysia has provided incentives for the participation of women in the areas of human development and employment, while addressing the need further to diversify their education and training and improve their employment prospects in an increasingly technological society.

In order to address this issue, therefore, the government introduced the National Policy on Women in 1989. This policy presented the needs, interests and situations of women and ensures that these concerns are included in mainstream development policy and programmes, with women participating as full and equal partners in Malaysia's economic development. Unofficially, it is known that Malaysian women are active in both private and government sectors, however, the lack of gender-differentiated data makes it difficult to distinguish clearly between men and women who are actively employed. Unofficially, however, female participation is thought to be higher in the education sector (i.e., teachers or lecturers), as production operators in factories and as nurses.

The table also suggests that women have made an important contribution to the increase in conventional and Islamic bank deposits. This is particularly the case in terms of employment in the government sectors, the policies of which are directed more towards *Bumiputra* participation in the job market, especially of Muslims, and thus indirectly contribute towards the development of deposits in Islamic banks.

2.3.2.2 Structural changes

Malaysia may not have been able to benefit substantially from the world commodity price boom in the late 1970s and achieve rapid economic growth if the country had not embarked on the programmes of economic diversification that began in the 1960s. Initially, Malaysia's economic diversification was largely motivated by the problem of economic instability that arose from an over-dependence on rubber, timber and tin exports, which were subject to unstable price fluctuations. Later, the policy of economic diversification was intensified to achieve other objectives, such as the eradication of poverty and the restructuring objectives of the New Economic Policy (NEP).

Table 2.9
Composition and growth of gross domestic product by kind of economic activity

Year	Agriculture, forestry, logging and fishing	Mining and quarrying	Manufacturing	Construction	Services	Gross Domestic Product
	Per cent of GDP	Per cent of GDP	Per cent of GDP	Per cent of GDP	Per cent of GDP	
1970	30.8	6.3	13.4	3.9	41.9	100.0
1980	22.9	10.1	19.6	4.6	40.1	100.0
1987[1]	20.0	12.6	19.8	3.5	45.3	100.0
1997	9.1	7.3	29.9	4.8	51.8	100.0
1998	9.4	8.1	27.9	4.0	55.6	100.0
1999	9.4	7.6	29.2	3.7	54.6	100.0
	Average change in %	Average change in %	Average change in %	Average change in %	Average change in %	
1970-1982	5.1	3.9	10.5	9.9	8.8	7.8
1983-1987	3.2	6.9	7.3	-4.4	4.1	3.9
1988-1997	1.0	3.5	13.9	12.9	10.8	9.3
1988-1998	0.5	3.4	11.1	9.1	9.7	7.6
1999	4.6	-1.2	8.9	-3.6	2.4	4.3

Note: [1] from 1987 onwards, GDP data are based on 1987 prices (before on the 1978 prices)

Sources: Compiled by the author using data from the *Monthly Statistical Bulletin*, Central Bank of Malaysia. (Various issues)
Compiled by the author using data from the *Central Bank and the Financial System in Malaysia-A Decade of Change-1989-1999*, Central Bank of Malaysia, 1999, p. 9.

During the 1960s and up until the 1980s, economic diversification was pursued along the lines of agricultural diversification and export-oriented industrialization. Both policies greatly transformed the Malaysian economy over the three decades from the 1960s to the 1980s. In the primary sector, a rapid expansion of the palm oil industry, cocoa and a modest expansion of rubber production led growth performance in the 1970s up until the late 1980s. However, in the deregulated environment prevailing since the late 1980s, not only has there been significant growth, but also much of it has

come from the expansion of manufacturing through private sector initiatives,[14] as shown in Table 2.9 and Figures 2.2 and 2.3.

Figure 2.2
Sectoral composition of GDP in 1995

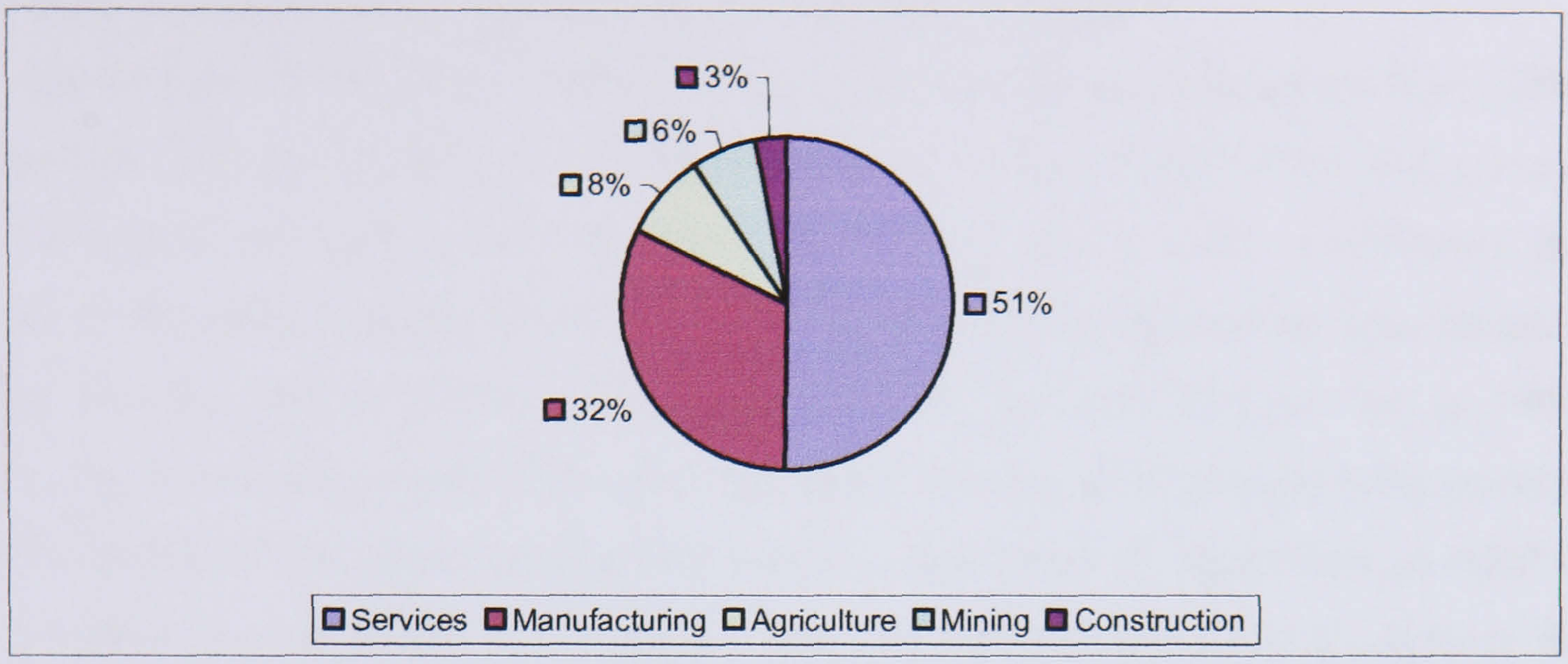
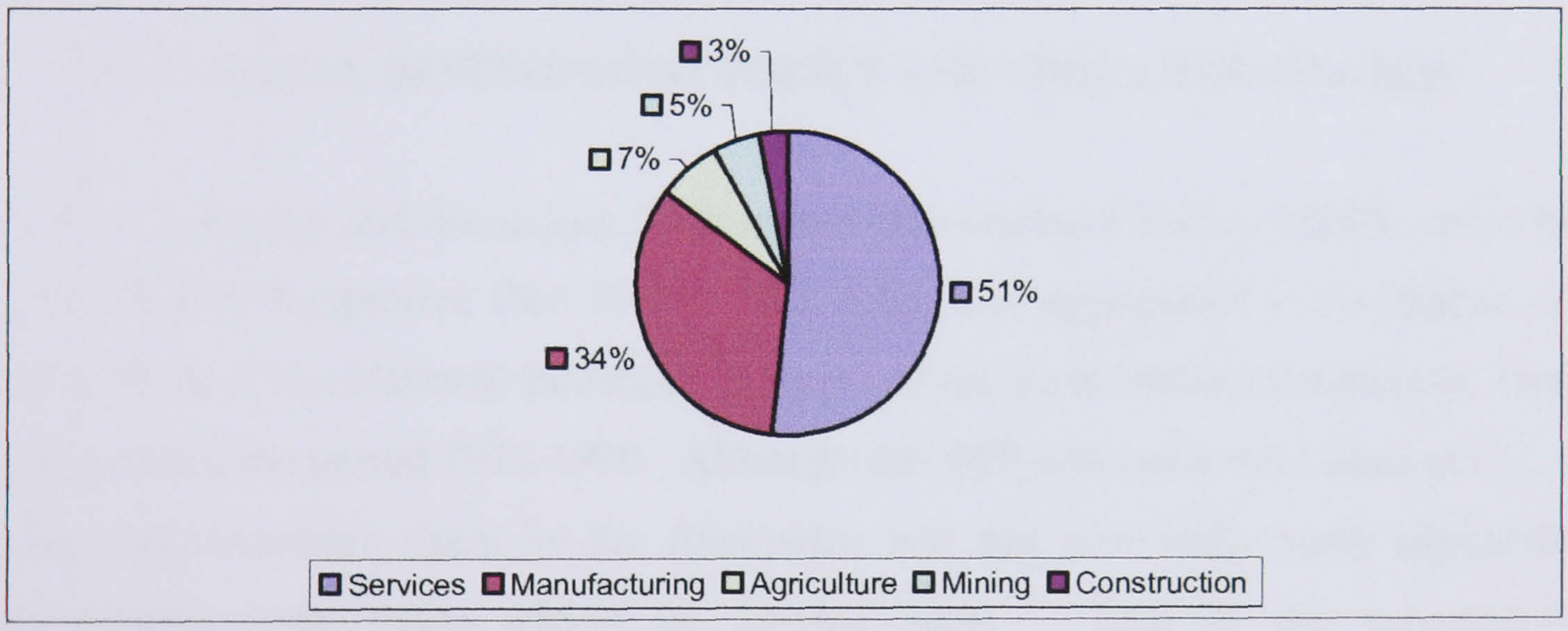


Figure 2.3
Sectoral composition of GDP in 2000



Source: Compiled by the author using data from the *Eighth Malaysia Plan, 2001-2005*, Government Printers, Kuala Lumpur: Malaysia, 2001, p. 35.

Table 2.9 indicates that in 1970 the contribution of the agricultural sector to the economy was 30.8 per cent of GDP, compared to only 13.4 and 41.9 per cent on the past of the manufacturing and services sectors respectively. In contrast, by 1999, the contribution of the agricultural sector to GDP had decreased to 9.4 per cent, whereas the contribution made by manufacturing and services had increased to 29.2 and 54.6 per cent of GDP respectively. This structural change in Malaysia's economy provided Malaysians with better job opportunities and higher wages. These led to an increase in their incomes and their savings (deposits) in the Malaysian banking industry, whether Islamic banks or conventional banks.

---

[14] Ibid., p. 29.

In addition, as shown in Table 2.9 and Figures 2.2 and 2.3, the main trend in the transformation of the Malaysian economy between 1970 and 2000 was the continual and substantial decline in the relative importance of the agricultural sector share in GDP, alongside a rapid increase in manufacturing with industrialisation.

Agriculture was the largest productive sector in the economy between 1970 and 1980 (see Table 2.9), but its share in GDP has been on the decline, falling from 30.8 per cent in 1970 to 20 per cent in 1987, and further to 9.4 per cent in 1999. Conversely, the share of the manufacturing sector has risen significantly during the last four decades, from 13.4 per cent in 1970 to 19.8 per cent in 1987, to reach 29.2 per cent in 1999. With the continued growth of the services sector and the poor prospects for primary commodities in the global market, the relative importance of agriculture to GDP is expected to decline further in the future. The increased flexibility and diversity of the Malaysian economy should, however, help it to grow more in future, with favourable consequences for deposits in the Malaysian banking industry.

2.4 THE NATIONAL DEVELOPMENT POLICY AND VISION 2020 (1991-2020)

Before analysing and discussing the National Development Policy (NDP), under the Second Outline Perspective Plan Period 1991-2000, it is appropriate to summarise the achievements of the National Economic Policy and the First Outline Perspective Plan, which covered the period 1971-1990. Although the NEP was not a total success (i.e., a 30 per cent economic share by the *Bumiputra* was not achieved), many significant improvements were made during its 20-year span. One of the encouraging achievements of the NEP was the reduction in the overall incidence of poverty and absolute poverty in Peninsular Malaysia from 49.3 per cent in 1970 to 15.3 per cent in 1990.[15]

However, despite this reduction, the gaps between the major ethnic groups in terms of household income remained wide (see Table 2.1). Table 2.1 also shows that, throughout the years from 1970 up to 1990, the mean monthly income of Chinese and Indian (the other major ethnic groups in Malaysia) households was significantly higher than that of the *Bumiputra*. In terms of employment, the *Bumiputra* were still under-represented in the commercial and industrial sectors. However, they were over-represented in the unskilled and low-paid labour market, even though their

---

[15] The *Second Outline Perspective Plan, 1991-2000*, National Printing Department, Kuala Lumpur: Malaysia, 1991, pp. 31-32, and see also the *Sixth Malaysia Plan, 1991-1995*, Government Printers, Kuala Lumpur: Malaysia, 1991, pp. 81-86.

representation in certain highly paid professional occupations (i.e., lecturers and teachers), and even in other professional jobs such as those of accountants, engineers and architects, had increased from 22.5 per cent in 1985 to 29.4 per cent in 1990.[16] The important issue to be noted here is that, even though the NEP target was not achieved, Malaysia enjoyed success in creating opportunities for jobs with better incomes. This raised income and hence deposits in the Islamic and conventional banks.

2.4.1 The National Development Policy (1991-2000)

Following the end of the NEP and the First Outline Perspective Plan (1971-1990), and in order to achieve new economic targets, the government introduced the National Development Policy (NDP) and also the Second Outline Perspective Plan (1991-2000), which was based on a new strategy. The NDP, which was implemented over the decade 1991-2000, was aimed at bringing about a more balanced development. The basic policies of the NEP have been maintained, since the experiences of the previous twenty years had shown that growth combined with the effective government policies for poverty eradication and restructuring had contributed significantly towards a substantial improvement in income distribution and the reduction of the ethnic imbalances in the country.

The main emphasis of the NDP is growth with equity to enable all Malaysians to participate in mainstream economic activities in order to ensure political stability and national unity. Because the full objectives of the NEP were not achieved, therefore, the NDP was introduced to achieve the following objectives:

(a) to reduce and eliminate social and economic inequalities among the ethnic groups and the states;

(b) to ensure balanced developments among the states and the major economic sectors of the economy; and

(c) to build a modern, progressive and industrialised Malaysian economy.

In the early 1990s, under the NEP, state-ownership of the manufacturing sector was introduced only in certain politically sensitive ventures in the automobile manufacturing (i.e., PROTON), petrochemicals, iron and steel and cement industries. However, the NDP was introduced in order to carry out more market-oriented policy reforms, accompanied by a strong focus on restoring and maintaining macroeconomic stability

---

[16] The *Seventh Malaysia Plan, 1996-2000*, Government Printers, Kuala Lumpur: Malaysia, 1996, pp. 84-85.

and meeting the infrastructure needs of a rapidly expanding economy.[17] The Sixth (1991-1995) and Seventh (1996-2000) Malaysian Plans saw a significant reduction in overall government expenditure and a shift away from public sector enterprises and towards projects designed by private sector development.[18]

Table 2.10
Expenditure on gross national product (GNP) at current prices

Year	Consumption			Investment			Exports of Goods & Non-Factor Services	Imports of Goods & Non-Factor Services
	Private	Public	Total	Private[1]	Public	Total		
	Per cent of GNP			Per cent of GNP			Per cent of GNP	Per cent of GNP
1970	60.9	18.6	79.5	11.8	6.0	17.8	46.3	42.0
1980	52.4	17.1	69.6	19.5	12.1	31.6	59.7	57.1
1982	55.6	19.2	74.9	20.1	19.1	39.1	53.3	62.5
1987	51.3	15.8	67.2	15.0	9.6	24.6	67.0	52.2
1997	47.8	11.5	59.3	33.4	11.9	45.3	98.5	97.5
1998	43.9	10.6	54.5	16.4	11.8	28.2	120.9	97.8
1999	45.4	11.8	57.2	12.8	12.5	25.3	122.8	98.6
	Average growth in %			Average growth in %			Average growth in %	Average growth in %
1970-1982	13.1	16.2	13.6	22.0	25.1	23.4	14.8	18.4
1983-1987	2.6	1.3	2.2	-1.4	-8.6	-4.6	9.8	1.2
1988-1997	12.6	9.8	12.0	22.8	15.9	20.5	17.8	20.7
1988-1998	10.6	8.1	10.0	13.1	14.3	13.6	18.3	18.8
1999	7.9	16.7	9.6	-19.7	9.9	-6.2	6.0	5.1

Note: [1] Includes inventories

Source: Compiled by the author using data from the *Monthly Statistical Bulletin*, Central Bank of Malaysia. (Various issues)

Table 2.10 also shows that, during the period 1988-1997, private investment increased at a double-digit rate of 22.8 per cent per annum in nominal terms. As a result, the share of private investment increased from 60.8 per cent of total investment in 1987 to 73.7 per cent in 1997, as shown in the table. These achievements in privatisation policy increased the number of Malaysian jobs with higher incomes and consequently increased deposits in the banking sector.

Under the NDP, the government approach towards increased Malay (*Bumiputra*) participation in the economy also changed. In addition, during the period of this policy, the government placed more emphasis on education, entrepreneurship, managerial expertise, and skill development within the Malay (*Bumiputra*) community.[19] These changes reflected a switch in the government's approach towards support for the Malay

---

[17] The *Second Outline Perspective Plan, 1991-2000*, National Printing Department, Kuala Lumpur: Malaysia, 1991, p. 3.
[18] The *Eighth Malaysia Plan, 2001-2005*, National Printing Department, Kuala Lumpur: Malaysia, 2001, p. 35.
[19] Ibid., pp. 91-97.

(*Bumiputra*) community. Government support was now designed to assist the Malay (*Bumiputra*) community to compete more confidently with the other communities, without being too dependent on the government.

The important point here therefore was that the policy had changed from being simply one of income redistribution, as under the NEP (1971-1990), to an attempt to promote *Bumiputra* education and skill acquisition in order to encourage *Bumiputra* business under the NDP (1991-2000). This has achieved some success in terms of *Bumiputra* business and at the same time has increased their income. This change in policy has both directly and indirectly increased the deposits of *Bumiputra* in Islamic banks. This relationship is shown in Tables 2.11 and 2.12 below.

Table 2.11
The *Bumiputra* mean monthly gross income and Islamic banks total deposits (in Ringgit)

Year	Bumiputra mean monthly gross income	Islamic banks total deposits
1970	172	n.a.
1973	209	n.a.
1976	237	n.a.
1980	348	n.a.
1990	940	1,297.7
1995	1,604	4,629.9
1999	1,984	24,500.8

n.a. = not available

Sources: Compiled by the author using data from the *Third Malaysia Plan*, 1971-1975, *Sixth Malaysia Plan*, 1991-1995, *Seventh Malaysia Plan*, 1996-2000, and *Eighth Malaysia Plan*, 2001-2005.

Table 2.11 shows that in 1990 the mean monthly gross income of the *Bumiputra* was RM940, and total Islamic bank deposits were RM1,297.7 million. However, the total Islamic bank deposits increased to RM4,629.9 million and RM24,500.8 million in 1995 and 1999 respectively, while mean monthly gross income for the *Bumiputra* increased from RM940 to RM1,604 and RM1,984 respectively. The important point to note here is that the changes made in government policies to help the *Bumiputra* have also helped Islamic banking development.

Table 2.12 shows that the disparities in share capital ownership were also significant among the ethnic communities, where *Bumiputra* individuals and trust agencies owned 2.4 per cent of total share capital of limited companies in 1970, compared to the 27.2 per cent in Chinese ownership. To redress such disparities, as mentioned above, a new economic strategy called the NEP was formulated and introduced in 1971, to be implemented over a period of 20 years until 1990.

Table 2.12
Malaysia: Ownership of share capital (at par value) of Limited Companies*, 1970, 1990, 1995 and 1999 (percentages)

Ownership group	1970	1990	1995	1999
Bumiputra	2.4	19.3	20.6	19.1
Bumiputra individuals & institutions#	1.6	14.2	18.6	17.4
Trust agencies	0.8	5.1	2	1.7
Non-Bumiputra	28.3	46.8	43.4	40.3
Chinese	27.2	45.5	40.9	37.9
Indians	1.1	1	1.5	1.5
Others				
Nominee companies	6.0	8.5	8.3	7.9
Foreigners	63.4	25.4	27.7	32.7

Notes: * Excludes shares held by federal, state and local governments.
Consists of investments owned by *Bumiputra* as direct investors and investment through institutions channelling *Bumiputra* funds such as the *Amanah Saham Nasional* and the *Amanah Saham Bumiputra* schemes.

Sources: *Seventh Malaysia Plan*, 1996-2000 and *Eighth Malaysia Plan*, 2001-2005.

As shown in Table 2.12, after the government introduced the NEP (1971-1990) and the NDP (1991-2000), the share in capital ownership by *Bumiputra* increased from 19.3 per cent in 1990 to 20.6 per cent in 1995, however, in 1999 *Bumiputra* ownership declined to 19.1 per cent, principally as a result of the Malaysian financial crisis which began in mid-1997, in which *Bumiputra* businesses were particularly hard hit. It is noticeable, however, that the policy change by the government, from one of simple income redistribution to one of encouraging *Bumiputra* in education and skills acquisition in order to promote *Bumiputra* business, has been successful in terms of the increase in deposits and the development of Islamic banking as a whole.

2.4.2 Vision 2020

The objectives of post-1990s economic development policy were first set out by the Prime Minister, Dr. Mahathir Mohamed, on 28 February, 1991, during the inauguration of the "Malaysian Business Council", just two months after the post-NEP period, when he introduced his "Vision 2020" plan. The plan's main goal was for Malaysia to achieve "fully developed country" status by 2020, mainly by accelerating the growth, industrialisation and modernisation of the economic, social and political structure. Therefore, Vision 2020 is essentially a long-term vision containing broad policy directions encompassing various dimensions, i.e., economic, social, political and cultural.[20]

---

[20] Economic Planning Unit, *The Way Forward (Vision 2020)*, 1991, www.epu.jpm.my/. (5th October, 2003)

Vision 2020 reflects the continuity of the old policies but incorporates new directions in creating a competitive, dynamic, robust and resilient economy.[21] Therefore, the new order of the development strategy occurred in every sector, i.e., the infrastructure and services sector, reflecting the changing role of the economic policy measures adopted by the government to develop that sector as a new growth sector so as to accelerate the transformation of Malaysia's economy into a high technology-driven and high value-added economy.

As the pace of industrialisation became more rapid, capital investment in the services sector was promoted intensively in Vision 2020. Rapid technological progress, the globalisation of the world economy and the deregulation and deepening of financial markets have increased the interlinkages between the services sector and the other sectors of the economy, in particular the manufacturing sector. In addition, as part of the effort to promote the development of the services sector, several initiatives have been taken to enhance the export of services. Those export-oriented and import substitution services sectors which were actively promoted included tourism, airlines, education, port and port-related services.

However, under Vision 2020, the new focus is on taking initiatives to expedite the development of advanced communications services, financial and managerial services and computer-related services. In 1996, the government launched the Multimedia Super Corridor (MSC).[22] The MSC is a land belt measuring 15 km by 50 km, stretching from Kuala Lumpur City Centre to the Kuala Lumpur International Airport (KLIA).[23] The MSC's communications network includes a digital optical fibre infrastructure. World class multimedia corporations have been invited to locate their business units and research and development facilities in the MSC. Initially, seven flagship applications were targeted for development, namely, electronic government, smart schools, telemedicine, research and development clusters, borderless marketing centres, worldwide manufacturing web and smart cards.[24]

The main strategy in the development of the MSC is the creation of a critical mass through the concentration of multimedia systems producers and consumers in the MSC.

---

[21] Economic Planning Unit, The *Third Outline Perspective Plan, 2001-2010*, Percetakan Nasional Malaysia Berhad, Kuala Lumpur: Malaysia, 2001, p. 6.

[22] The MSC is a vehicle for attracting world-class technology-led companies to Malaysia and for developing local industries. The MSC will bring together an integrated environment with all the unique elements and attributes necessary to create the perfect global multimedia climate.

[23] Multimedia Super Corridor, *Multimedia Super Corridor Status*, www.gamebrains.com/malaysia/overview/masc/. (5th October, 2003)

[24] Multimedia Super Corridor, *Multi-Purpose Card*, www.msc-expo.com.my/home.htm/. (5th October, 2003)

One result of the government's policy in changing the structure of the economy, especially in the services sector (see Figures 2.2 and 2.3), has been to create many new job opportunities with good incomes. This has encouraged people to deposit more of their money in banks.

2.4.3 The National Vision Policy (1991-2020)

As already discussed above (Vision 2020), the National Vision Policy (NVP) incorporates the critical thrusts of the previous development policies, namely the New Economic Policy and the National Development Policy, with the overriding objective of national unity. Eradicating poverty irrespective of race, the restructuring of society and balanced development will remain key strategies. The NVP is also guided by the strategic challenges of Vision 2020, which laid out the direction for Malaysia to become a fully developed nation by 2020.

On the other hand, the essence of the NVP represents the consolidation of all past development efforts and is aimed at establishing a united, progressive and prosperous "Bangsa Malaysia" in which people live in harmony and engage in full and fair partnerships. To address the challenges faced by the nation in its quest to become a fully developed nation in its own mould, emphasis will also be given to the building of a resilient, competitive nation and an equitable society to ensure unity and social stability.[25]

In order to realise the objectives, amongst the critical thrusts of the NVP are the following:

(a) building a resilient nation by fostering unity, inculcating the spirit of patriotism, nurturing political maturity, cultivating a more tolerant and caring society with positive values;

(b) promoting an equitable society by eradicating poverty and reducing imbalances among and within ethnic groups as well as regions;

(c) sustaining high economic growth by strengthening the sources of growth, the financial and corporate institutions as well as macroeconomic management, and also enhancing competitiveness to meet the challenges of globalisation and liberalisation;

---

[25] Economic Planning Unit, *The Way Forward (Vision 2020)*, www.epu.jpm.my/. (5th October, 2003)

(d) developing a knowledge-based economy as a strategic move to raise the a value-added economy of all economic sectors and optimising the brain power of the nation; and

(e) strengthening human resource development to produce a competent, productive and knowledgeable workforce and pursuing environmentally sustainable development to reinforce long-term growth.

Under the NVP, the growth of the Malaysian economy during the 1991-2000 period was satisfactory, despite the crisis which adversely affected the economy from mid-1997 to 1998 (see Table 2.5). The measures adopted by the government to overcome the crisis since mid-1998 have brought about a swift economic recovery. The prospects for growth during the 2001-2005 period (Eighth Plan period) take into account the challenges arising from a more liberalised global economy and rapid technological transformation. However, greater efforts should be made to ensure the sustainability and resilience of the economy in the long term in order to attain the target of the nation set out in Vision 2020 under the National Vision Policy (NVP).

The success of government policies, especially in the economic and social spheres will have a positive impact on Malaysia's per capita income and directly or indirectly will have an impact on and assist the development of Islamic banking. In addition, in general it will also help to bring about an increase in the deposits in the Islamic and conventional banking industry in Malaysia.

2.5 SUMMARY AND CONCLUSION

This chapter has outlined the macroeconomic and policy aspects of the Malaysian economy over the past four decades since independence, as well as the direction of the economy in the nineties, including the Malaysian financial crisis. It has also shown that the 1980s were a difficult and challenging period when structural adjustments had to counter the impact of the economic downturn. Since then, there has also been a distinct shift in development policy to promote the private sector, specifically in the manufacturing sector, as the main engine of economic growth.

Political and economic stability, openness to foreign trade and investment, and the rapid accumulation of assets have all played key and interdependent roles in promoting Malaysia's transformation from a relatively poor, predominantly agrarian developing country before the 1980s into an upper middle class income and newly industrialised country a quarter of a century later.

The New Economic Policy (NEP) period actually comprises a number of fairly distinct phases with respect to Malaysian openness to global trade. The first decade witnessed the growing reliance of the Malaysian economy on exports, and this was followed by an episode emphasising infant industries during the 1980s. During this time the Malaysian economy relied upon a relatively narrow industrial base, in which raw material processing, especially of domestic material, remained important, with a growing dependence on the production and export of electronic goods.

Beginning in the mid-1980s, the industrial base in Malaysia became more diversified as a result of a growing and important role for heavy industries (i.e., the cement and petrochemicals industries). However, the contribution of these sectors to the Malaysian economy does not appear to have expanded as quickly as that of the electronics industries.

Foreign direct investment (FDI) has played a key role throughout the periods of the New Economic Policy (NEP), the National Development Policy (NDP) and since. Indeed, among the developing Asian countries (i.e., Thailand, India and Indonesia), Malaysia has been one of the most important hosts to foreign direct investment. This would suggest that the particular role of FDI in generating low skill jobs was more important in the past than it is now.

Amongst the other major factors contributing to the success of Malaysia's economy are: microeconomic stability, which has provided a strong foundation for undisrupted economic growth and an environment conducive to private sector participation; political stability, peace and harmony, which the nation has enjoyed, and which have provided an appropriate environment for the nation to focus its efforts on economic development. A stable government has also resulted in greater consistency and certainty with regard to policies, so that to a large extent distruption can be avoided. The private sector has therefore been able to undertake long term investment and such stability has also generated greater confidence in foreign investors. The open and increasingly liberal policy of the government, since the mid-1980s, has led to concerted and accelerated efforts to deregulate and liberalise the economy.

Malaysia has also been able constantly to expand and upgrade its infrastructure facilities to meet the increasing demand for rapid economic growth and industrialisation. In order to accelerate the expansion of essential infrastructure facilities, the government has encouraged private sector participation in the building of roads, ports and airports. In addition, Malaysians have become increasingly conscientious and committed to their careers and to pursuing higher levels of success

more aggressively. Malaysia's hard-working culture has been a key element in attracting foreign investors to set up their operations in Malaysia. This factor has been critical, as most of the industries engaged in over the last decade have been labour-intensive.

However, Malaysia was fortunate in being able to make a quick economic recovery in 1999 from its worst recession since independence in 1957. GDP grew by 5 per cent, responding to a dynamic export sector, which grew by over 10 per cent, and the fiscal stimulus from higher government spending. The large export surplus has enabled the country to build up its already substantial financial services, to $31 billion at year end in 1999. These stable macroeconomic environments, in which both inflation and unemployment stand at 3 per cent or less has made possible the relaxation of most of the capital controls imposed by the government in 1998 to counter the impact of the Asian financial crisis.

Generally speaking, the recovery necessitates efficient planning and implementation at all levels of government as well as close cooperation between the public and private sectors. While the government will take measures to strengthen the capacity, efficiency and effectiveness of the government agencies so as to improve the quality of services, the private sector is expected to respond positively and to be an active partner in realising the objectives of national development.

All the above phenomena - the success story of the New Economic Policy, the National Development Policy, and Vision 2020, the inflow of foreign direct investment, plus local capital obtained from the high savings rate, the low rate of inflation and the success of the economic structural changes – have transformed Malaysia from a developing low income country to a high middle income country. The status of being a newly industrialising country has had a positive impact on the growth of deposits in Malaysian Islamic and conventional banks.

CHAPTER THREE

BANK NEGARA AND MONETARY POLICY IN MALAYSIA

3.1 INTRODUCTION

The purpose of this chapter is to examine the role of the Central Bank (Bank Negara Malaysia) and monetary policy in Malaysia. It is envisaged that in an environment where Islamic and conventional banks operate side by side, the impact of Islamic banking is likely to be affected by monetary policy and the level of financial development in the conventional banking system.

The assessment of the role of Bank Negara, monetary policy and financial development in this chapter is made in order to assess the performance of Islamic banking within the Malaysian financial system in chapter four. Therefore, this chapter will begin with an overview of the establishment of the Malaysian Central Bank, the Malaysian banking system and the development of the Malaysian monetary and financial structure up to the end of the 1990s. The degree of monetary and financial development at the time when Bank Islam was established will also be outlined. The assessment of the performance of the Islamic banks in chapter four will also take into account the recessionary climate of the mid-1980s and the 1990s described in this chapter.

3.2 ESTABLISHMENT OF BANK NEGARA MALAYSIA

The Central Bank of Malaya Ordinance, 1958 (CBO) establishing the Central Bank of Malaysia (BNM) (or Central Bank of Malaya until the formation of Malaysia in September 1963), was promulgated on 26 January 1959. Simultaneously, the Banking Ordinance, 1958, which provided for the licensing and regulation of the business of banking in the then Federation of Malaya also came into force. The CBO was revised in 1994 and is now the Central Bank of Malaysia Act 1958 (Revised–1994).

By these ordinances, Bank Negara Malaysia, as the Central Bank, is committed to excellence in promoting monetary and financial stability and fostering a sound and progressive financial sector, in order to achieve sustained economic growth for the benefit of the nation. This will be achieved through:

(a) Promoting a work culture which emphasises the highest standards of professionalism and integrity, prudence, teamwork and innovation;

(b) Developing and maintaining a committed workforce which is highly competent and proactive, sensitive to the changing needs of the industry;

(c) Promoting the effective use of technology and good working practices to enhance productivity, efficiency and quality;

(d) Adopting policies and practices to enhance the competitiveness of local financial institutions to face international competition; and

(e) Having the necessary financial resources and financial instruments to effectively manage monetary stability.[1]

3.3 BANK NEGARA MALAYSIA

The Central Bank of Malaysia Act 1958 (Revised-1994) defines Bank Negara Malaysia (Central Bank) as the bank which constitutes the apex of the monetary and banking structure of the country, with the objectives of:

(i) Promoting monetary stability and a sound financial structure;

(ii) Issuing currency and keeping reserves to safeguard the value of the currency;

(iii) Acting as a banker and financial adviser to the government; and

(iv) Influencing the credit situation to the advantage of Malaysia.

These objectives of Bank Negara are inter-related and complementary. Bank Negara, because of its ability to issue currency and control the money demand and money supply, has the primary responsibility to ensure that domestic prices remain stable so that the benefits of economic growth are not eroded. Monetary stability, in turn, is dependent on the existence of a sound and stable financial system for the effective conduct of monetary policy.[2]

In contrast to mature industrial economies that have already developed sophisticated financial systems, Bank Negara, therefore, a wider role in developing the financial infrastructure, including the capital market, to ensure that the monetary measures implemented have the desired effects in a predictable manner on the ultimate objectives that have been identified.

The formation of Bank Negara is also important because of the nation's need to promote the soundness of the financial system in order to allow the smooth functioning

---

[1] Bank Negara, *Objectives and Functions*, www.bnm.gov.my/index.php/. (5th October, 2003)
[2] Ibid., from www.bnm.gov.my/index.php/. (5th October, 2003)

of the intermediation process, so that domestic savings are mobilised and transmitted to investors, thereby contributing to the overall growth in investment and output.[3] In this respect, Bank Negara acts as a banker for currency issue, as the keeper of international reserves and to safeguard the value of the *Ringgit*, as banker and financial adviser to the government, as the agency responsible for monetary policy and management of the financial system and as banker to the banks.[4]

3.3.1 Objectives of Bank Negara

The principal objectives of Bank Negara are as follows:

3.3.1.1 To promote monetary stability and a sound financial structure

i. To promote monetary stability

The ultimate goal of monetary policy in most economies increasingly points towards a common goal of attaining monetary or price stability. Price stability is a prerequisite for sustained economic growth, in the absence of which the mobilisation of resources to produce investment would be adversely affected. Malaysia has for several decades maintained price stability, with inflation averaging 3.5 per cent per annum over these decades. Nevertheless, there were a number of brief episodes of steep price increases caused mainly by non-monetary factors as discussed in chapter two. However, early corrective measures ensured a relatively rapid return to price stability. For more than a decade, the maintenance of price stability has contributed towards the achievement of sustainable economic growth and the structural transformation of the Malaysian economy.

To achieve monetary stability, the monetary strategy of Bank Negara prior to the early 1990s was to target monetary aggregates, as the movements of these aggregates were highly correlated with inflation.[5] However, developments in the economy and in the financial system during the early 1990s weakened this relationship. Consequently, in the early 1990s, Bank Negara gradually shifted its focus from monetary targeting to interest rate targeting in the daily conduct of monetary policy, and now Bank Negara

---

[3] Central Bank of Malaysia, The *Central Bank and The Financial System in Malaysia: A Decade of Change–1989-1999*, 1999, p. 108.
[4] Central Bank of Malaysia, *Central Bank of Malaysia Report*, Kuala Lumpur: Malaysia, 1996, p. 98.
[5] The *Second Outline Perspective Plan, 1991-2000*, National Printing Department, Kuala Lumpur: Malaysia, 1991, p. 81.

operates through short-term interest rates to achieve its ultimate objective of price stability. Nevertheless, Bank Negara continues to monitor monetary aggregates, credit growth, price developments, including asset prices, and indicators of consumption and investment, as well as other economic indicators.

Bank Negara has at its disposal a wide range of monetary instruments to manage liquidity in order to achieve its objective of price stability. These include open market operations, direct intervention by Bank Negara to borrow or lend in the inter-bank money market, the issuance of Bank Negara papers and the variation of the stability reserve requirement (SRR).[6]

ii. Promoting a sound financial structure

The other side of the coin to monetary stability is financial stability. This is in view of the fact that the existence of a sound and stable financial system is necessary for the conduct of monetary policy. The maintenance of financial stability, in turn, is dependent on the existence of stable monetary conditions so that the balance sheets of corporations and financial institutions are not adversely affected by the conditions of macroeconomic stress. The existence of appropriate polices is important to ensure a sound banking system that provides a mechanism for the intermediation process for the economy to function efficiently, in addition to being the transmission mechanism for monetary policy.

An essential element for the promotion of financial stability is the existence of a strong and effective prudential framework. This is to ensure that banking institutions operate in a sound and prudent manner, thereby minimising the risk of bank failures, which could be destructive and have adverse implications for economic stability. Bank Negara, as a lender of last resort, also has to ensure that the level of risk assumed by the banking system is kept to a prudent level so that the need for recourse to this facility is minimised.

Bank Negara is the sole authority regulating the banking industry in Malaysia, with its regulatory powers enshrined in various provisions in the Central Bank Act (CBA), the Banking and Financial Institutions Act (BAFIA) and the Islamic Banking Act (IBA). Bank Negara is currently responsible for the supervision of 32 commercial banks, 2 Islamic banks, 20 finance companies, 12 merchant banks, 7 discount houses, and 36 representative offices of foreign banks' (see Figure 3.1). The BAFIA provides for Bank

---

[6] Central Bank of Malaysia, The *Central Bank and The Financial System in Malaysia: A Decade of Change 1989-1999*, 1999, pp. 110-111.

Negara to revoke banking licences and also empowers Bank Negara to take prompt corrective actions to deal effectively with ailing financial institutions. These powers, among others, include the removal of directors, the appointment of directors and advisors, the suspension of lending activities, the appointment of receivers and the reduction of capital.

In undertaking its supervisory activities, Bank Negara adopts two approaches, namely regulation and off-site monitoring, and on-site examination. Regulation is concerned with the formulation and implementation of specific rules and regulations, while off-site monitoring continually reviews the financial condition of the banking institutions through the submission of statistical returns and reports by the individual institutions, including the conduct of monthly stress tests.

With regard to on-site examination, the approach is to plan and conduct a customised examination to match the size, activities and risk profiles of the banking institutions. In this way, supervisory resources can be concentrated on areas that expose an institution to the greatest degree of risk. The risk-based approach to supervision, supported by specific powers to deal with problem institutions, enables the supervisors to detect emerging problems and to respond promptly to deal with distress in individual institutions, thereby promoting overall financial stability.[7]

At the macro level, Bank Negara develops regulatory policies for the orderly development of the banking industry, consistent with the principle objective of the Bank Negara to promote monetary stability and a sound financial structure. To date, Malaysia has adopted 23 out of the 25 BIS Core Principles of Banking Supervision,[8] and partially implemented the other two Principles.

Bank Negara has played an active role in developing the financial infrastructure. The initial phase of development focused on institutional building in the 1960s and 1970s, providing the basic financial infrastructure to promote financial intermediation throughout the country. This was followed by the strengthening of the banking system in the 1980s through a process of structural deregulation and the development of the prudential regulatory framework. Since then, the emphasis has been to develop the system into one that is innovative, responsive and market-driven so that the financial sector can assume a more significant role in contributing to supporting sustainable balanced growth.

---

[7] Lawyerment, *Malaysian Financial Law–Banking Law–Bank Negara Legislation and Enforcement*, www.lawyerment.com.my/financial/banking.shtml/. (7th October, 2003)

[8] Bank for International Settlements, *Core Principles for Effective Banking Supervision*, www.bis.org/press/p970922.htm/. (7th October, 2003)

Following the Asian financial crisis in mid-1997, Bank Negara adopted further measures to restructure the banking sector in order to address emerging problems. These measures included a merger programme for the finance companies, the setting up of an asset management company, Danaharta[9], to address the issue of rising non-performing loans; the establishment of a special purpose vehicle, Danamodal[10], to address the erosion of capital of certain banking institutions; and the establishment of the Corporate Debt Restructuring Committee (CDRC) to provide the platform for voluntary debt provisioning.[11]

These pre-emptive measures placed the banking system in a better position to continue to perform its intermediation function and to support economic recovery. These measures were complemented by other measures to strengthen the institutional framework within the system and, hence, ensure the continued strength and soundness of the banking system.[12]

The Electronic Transfer of Funds and Securities was introduced in July 1999. Under this system, the processing and settlement of funds transfer instructions and securities transactions would take place simultaneously, with transfer settled individually. Intra-day finality for individual transfers would be provided, thereby enhancing the stability of the financial system.

Besides institution-building, efforts were also focused on developing financial instruments, starting with the introduction of Treasury bills in the 1960s. Additional instruments were introduced subsequently to help develop further the money and foreign exchange markets, as well as the bond markets. Current efforts are focused on the broadening and deepening of the corporate bond market, building on measures which have been in effect since 1986.

---

[9] Danaharta was established by the Government of Malaysia to act as the national asset management company and is a public company incorporated under the Companies Act, 1965 (new legislation 1998). It is owned by the Minister of Finance Incorporated. Its prime objectives are to re-energise the Malaysian financial sector by buying non-performing loans (NPLs) from financial institutions and maximising their recovery value.

[10] Danamodal (Danamodal Nasional Berhad) was established as a special purpose vehicle to revitalize Malaysia's banking sector. While the government would guide this recapitalization process, Danamodal would ensure that it is commercially driven – that the investment of capital in the banking industry will be directed by market-based principles.

[11] Lawyerment, *Malaysian Financial Law–Danaharta Act*, www.lawyerment.com.my/financial/danaharta.shtml/. (8th October, 2003)

[12] Ibid., p. 112.

3.3.1.2 To issue currency and keep reserves safeguarding the value of the currency

In performing its function of issuing currency, Bank Negara is required by law to maintain a minimum cover of 80.5 per cent in external assets against notes and coins in circulation. In practice, Bank Negara always maintained a cover well above 100 per cent of Bank Negara currency liabilities, reflecting its commitment to maintaining full gold and foreign exchange backing for the Malaysian *Ringgit*. In 1999, the cover was approximately 550 per cent.

Traditionally, the policy is for the *Ringgit* exchange rate to be determined by market forces and to reflect underlying economic fundamentals. Interventions are conducted only to smooth excessively volatile fluctuations.

The onset of the crisis in July 1997 and the resultant instability in the regional and global environment prompted the introduction of selective exchange control measures on 1 September 1998, and a fixing of the exchange rate at US$1=RM3.80 on 2nd September 1998. These measures have brought about a stable domestic environment. The exchange rate regime is consistent with the underlying fundamentals and the macroeconomic and financial policies and therefore has operated efficiently. Adjustment of the fixed exchange rate will not be necessary as long as it remains consistent with the economic fundamentals. However, the fixing of the exchange rate at US$1=RM3.80 still implemented until now.

The regime has provided an environment of reduced uncertainty and efforts are directed towards ensuring that the exchange rate is consistent with other macroeconomic policies. Therefore, the Malaysian government remains committed to maintaining a fixed exchange rate regime and selective capital controls into the immediate future as a means to create stability domestically and to support the recovery process.[13]

Maintaining a strong reserve position is also important to both the short-term objective of economic recovery as well as the long-term aim to maintain a sustainable external position. A large reserve cushion is indeed a key element in protecting the country against unforeseen destabilising developments. This is important to sustain market confidence and stability, enhance creditworthiness and at the same time, provide

---

[13] Fordham, *Malaysia Exchange Rate Performance*, www.fordham.edu/emp/country_studies/malaysia.pdf/. (8th October, 2003)

the government with greater flexibility in the conduct of domestic policies and this policy have been implemented until now.[14]

3.3.1.3 To act as a banker and financial adviser to the government

The business of Bank Negara includes managing the liabilities of the government both in Malaysia and abroad. It advises the government on its loan programmes, including the terms and timing of the loans and the issue of new types of securities. In addition, Bank Negara is responsible for the trading, registering, settlement and redemption of government securities through its computerised trading and settlement system.

In Malaysia, the CBA also empowers Bank Negara to provide temporary advances, known as 'ways and means' advances, to the government to cover any deficit in the budget revenue. However, there are legal limitations as to the amount and the duration of loans that Bank Negara can make available to the government. The main underlying philosophy of these legal limitations is to prevent the government from resorting to deficit financing.

As the government's adviser, Bank Negara maintains a close relationship with the Ministry of Finance at all levels. The Secretary-General to the Treasury is a member of the Board of Directors of Bank Negara. At the policy level, there is frequent contact between the Governor, including the Board of Bank Negara, and the Minister of Finance. Twice a year, the Governor presents, to the Minister of Finance, Bank Negara assessment of the economy and the challenges facing the economy, as well as a package of policy recommendations to address these challenges. Contacts at the policy level are supplemented by exchanges at the technical level as officers of both the Treasury and Bank Negara are in regular consultation on a wide range of economic and technical matters.

In addition, Bank Negara relationship with the government is maintained through the participation of the Governor and Bank Negara officials in various government committees. Involvement is at the highest policy levels (as reflected in the Governor's participation in the National Development Planning Committee) as well as at the highest technical levels in the formulation of the five-year development and outline perspective plans to achieve the national economic goals.[15]

---

[14] Central Bank of Malaysia, *Monthly Statistical Bulletin*, 2001, p. 38.
[15] Central Bank of Malaysia, The *Central Bank and the Financial System in Malaysia: A Decade of Change 1989-1999*, 1999, p. 115.

3.4 THE STRUCTURE OF THE MALAYSIAN FINANCIAL SYSTEM

As discussed earlier, one of the priorities following the establishment of Bank Negara was to develop indigenous banking institutions and establish the special development of financial institutions, in order to help promote monetary and financial stability, fostering a sound and progressive financial sector, and to achieve sustained economic development.[16]

An overview of the structure of the financial system in Malaysia as at 31st May 2004, and 1st March 2004 is shown in Figures 3.1 and 3.2. From the figures, the Malaysian financial system can be seen to be divided into two main parts, namely, financial institutions (which can also be divided into two parts: the banking system and non-bank financial intermediaries) and financial markets.[17]

Table 3.1 shows the assets of the financial system and its components over the period 1988-2003. From the table, it may be seen that the total assets of the financial system rose from RM237.4 billion at the end of 1988 to RM1,564.0 billion at the end of 2003.

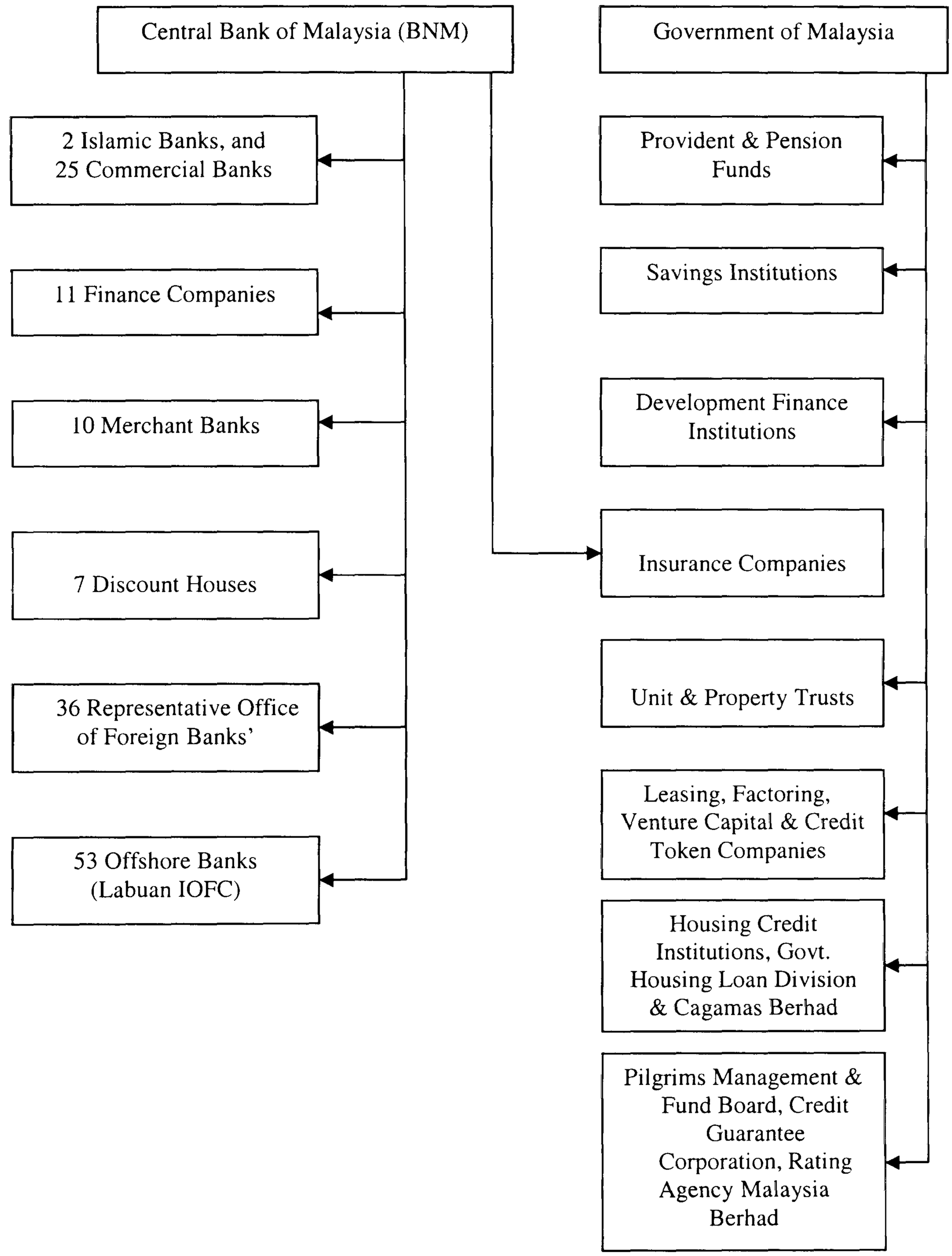
In order to face the future challenges for the financial system, Bank Negara recognises that the opening up of the domestic financial sector to foreign competition would contribute towards creating a more efficient, competitive and market-driven financial sector, thus enabling the sector to play a more efficient and effective role in the economy. However, for the benefit of this liberalisation to be fully realised, the pace of liberalisation has to accord with the capacity and ability of the domestic financial system to absorb these changes without undermining financial stability.

Therefore, Bank Negara and the Malaysian government adopted a gradual and progressive approach to liberalisation by building upon infrastructure and regulatory framework with the introduction of the Financial Sector Master Plan in 2001, under the Third Outline Perspective Plan (2001-2010), in order to change the country's banking landscape by means of a merger exercise among the main domestic financial institutions. The merger exercise, which would involve 10 anchor groups of the main Malaysian banks, was proposed and successfully consolidated by the end of December 2002, as shown in Figure 3.3.

---

[16] Ibid., p. 61.
[17] Ibid., p. 67.

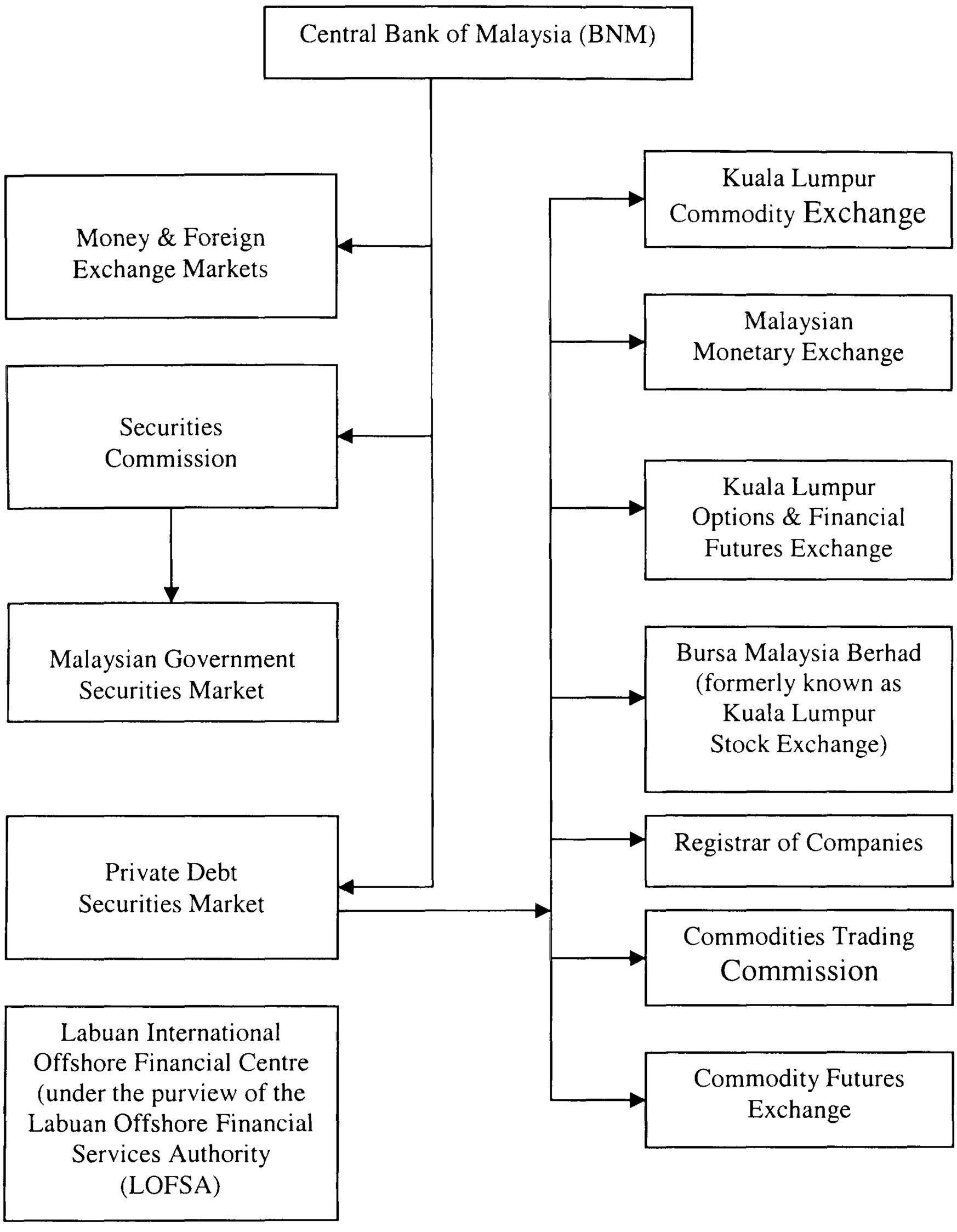
Figure 3.1
The Malaysian financial system (As at 31st May 2004)



Sources: Compiled by the author from www.bnm.gov.my/fin_sys/financial.htm/ in *The Financial System*, Central Bank of Malaysia, 2002.
Compiled by the author from www.bnm.gov.my/fin_sys/financial.htm/ in *List of Banking Institutions*, Central Bank of Malaysia, 2004.

Figure 3.2
The Malaysian financial system – The financial markets (As at 1st March 2004)

The financial markets



Sources: Compiled by the author from www.bnm.gov.my/fin_sys/financial.htm/ in *The Financial System*, Central Bank of Malaysia, 2002.
Compiled by the author from www.bursamalaysia.com/website/aboutus/ in *Bursa Malaysia Group*, Bursa Malaysia Berhad, 2004.

Table 3.1
Assets of the financial system (RM million)

	1988	1989	1990	1991	1992	1993
Banking System	160,982	187,917	227,411	265,631	310,306	412,595
Bank Negara Malaysia	27,142	31,903	40,914	44,559	59,592	100,265
Banking Institutions	131,629	151,399	181,705	215,808	245,072	306,342
Commercial Banks[2]	98,420	113,939	130,670	153,509	175,513	224,385
Finance Companies	25,526	28,579	39,972	49,039	54,911	63,265
Merchant Banks	7,683	8,881	11,063	13,260	14,648	18,692
Discount Houses	2,211	4,615	4,792	5,264	5,642	5,988
Non-Bank Financial Intermediaries	76,468	81,731	98,110	109,200	129,954	156,468
Provident & Pension Funds	43,328	46,771	52,776	59,929	70,724	84,086
Insurance Funds	7,530	8,198	9,536	11,383	13,996	17,504
Development Finance Institutions	6,412	5,884	5,867	6,177	7,107	8,605
Savings Institutions	7,621	7,375	7,521	8,504	9,575	11,435
Other Non-Bank Financial Intermediaries	11,577	13,504	22,409	23,209	28,551	34,838
Total Assets	237,450	269,648	325,521	374,831	440,260	569,063

Table 3.1 (Continued)
Assets of the financial system (RM million)

	1994	1995	1996	1997	1998	1999
Banking System	441,673	515,717	629,822	812,003	761,963	778,055
Bank Negara Malaysia	92,799	88,476	96,739	108,921	123,384	128,048
Banking Institutions	339,525	414,414	515,912	682,137	620,115	630,792
Commercial Banks	242,468	295,460	362,070	485,450	458,290	462,584
Finance Companies	73,472	91,892	119,769	152,387	122,597	126,062
Merchant Banks	23,585	27,062	34,073	44,300	39,228	42,146
Discount Houses	9,349	12,827	17,171	20,945	18,474	19,215
Non-Bank Financial Intermediaries	183,521	231,384	287,070	300,952	321,886	331,343
Provident & Pension Funds	97,723	114,556	136,239	154,554	172,959	175,388
Insurance Funds	21,478	25,676	31,222	35,364	38,298	39,285
Development Finance Institutions	9,652	11,787	13,293	15,460	18,790	21,048
Savings Institutions	12,871	14,766	17,636	18,817	17,034	19,154
Other Non-Bank Financial Intermediaries	41,798	64,598	88,680	76,757	74,805	76,468
Total Assets	625,194	747,101	916,892	1,112,955	1,083,849	1,109,398

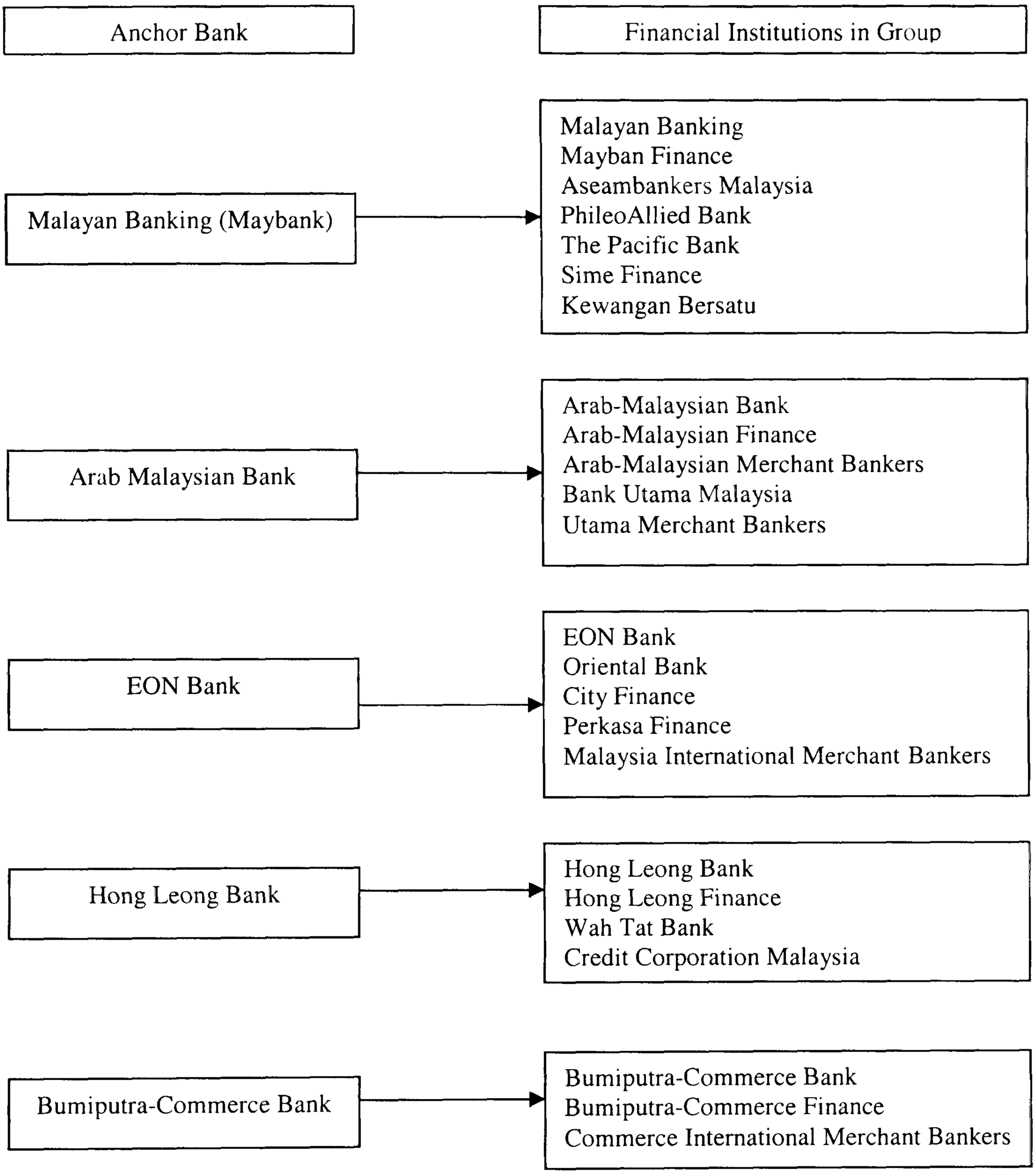
Sources: Compiled by the author using data from the *Central Bank and the Financial System in Malaysia-A Decade of Change, 1989-1999*, Bank Negara Malaysia, 1999, p. 636.
Compiled by the author from www.bnm.gov.my/index.php?ch=109&pg=294&mth=5&yr=2004, *Monthly Statistical Bulletin*, Bank Negara Malaysia.

Table 3.1 (continued)
Assets of the financial system (RM million)

	2000	2001	2002	2003
Banking System	827,826	860,959	919,588	1,046,658
Bank Negara Malaysia	146,808	149,578	162,197	200,815
Banking Institutions	663,087	692,835	737,627	815,688
Commercial Banks	512,664	529,675	563,236	629,606
Finance Companies	109,382	121,791	130,224	142,019
Merchant Banks	41,041	41,369	44,167	44,063
Discount Houses	17,931	18,546	19,764	30,155
Non-Bank Financial Intermediaries	296,444	323,198	363,570	517,357
Provident & Pension Funds	165,431	174,475	185,243	266,363
Insurance Funds	44,926	51,177	60,192	81,326
Development Finance Institutions	17,968	18,863	20,181	45,015
Saving Institutions	15,146	16,137	18,769	34,125
Other Non-Bank Financial Intermediaries	52,973	62,546	79,185	90,528
Total Assets	1,124,270	1,184,157	1,283,158	1,564,015

Sources: Compiled by the author from
www.bnm.gov.my/index.php?ch=109&pg=294&mth=5&yr=2004, *Monthly Statistical Bulletin*, Bank Negara Malaysia.
Compiled by the author from
www.bnm.gov.my/files/publication/ar/en/2003/cp01.pdf, The Malaysian Economy in 2003, *Annual Reports*, Bank Negara Malaysia.

Figure 3.3
Proposed and successful merger exercise (consolidation) of Malaysian banking (As at end-December 2002)



Source: Bank Negara Malaysia

Figure 3.3 (Continued)
Proposed and successful merger exercise (consolidation) of Malaysian banking (As at end-December 2002)

Anchor Bank	Financial Institutions in Group
Public Bank	Public Bank Public Finance Hock Hua Bank Advance Finance Sime Merchant Bankers
Affin Bank	Affin Bank Affin Finance Perwira Affin Merchant Bankers BSN Commercial Bank BSN Finance BSN Merchant Bank
Multi-Purpose Bank	Multi-Purpose Bank International Malaysia Bank Sabah Bank MBf Finance Bolton Finance Sabah Finance Bumiputra Merchant Bankers Amanah Merchant Bank
Southern Bank	Southern Bank Ban Hin Lee Bank Cempaka Finance United Merchant Finance Perdana Finance Perdana Merchant Bankers
RHB Bank	RHB Bank RHB Sakura Merchant Bankers Delta Finance Interfinance

Source: Bank Negara Malaysia

3.4.1 The financial institutions

The financial institutions can be broadly divided into the banking system and the non-bank financial intermediaries, as shown in Figure 3.1 and Table 3.1. The banking system is the largest component of the financial system, accounting for about 70 per cent of the total assets of the financial system.[18] The total assets of the financial system crossed the RM1,000 billion mark in 1997, and ended the year 2003 at RM1,564.0 billion, as shown in Table 3.1.

(a) The banking system

Banking institutions are institutions whose principal liabilities are generally accepted and viewed by economists as money. The banking system consists of Bank Negara, the banking institutions and other financial institutions, namely the discount houses, the representatives of foreign banks and the offshore banks in the International Offshore Financial Centre in Labuan (Labuan IOFC).[19] Bank Negara, is the sole currency issuing authority in the country, and the commercial banks (i.e. conventional and Islamic banks) are the only institutions allowed to operate demand deposits (current accounts). The commercial banks (conventional and Islamic banks) are the primary mobilises of deposits and the main source of credit in the markets.

Table 3.1 shows that the total assets of the commercial banks at the end of 1988 were RM98.4 billion, increasing to RM485.4 billion in 1997; however, due to the financial crisis in mid-1997, the total assets of commercial banks decreased to RM458.2 billion. The banking system as a whole also includes the representative office of the foreign banks, and also the offshore banks in the International Offshore Financial Centre in Labuan (Labuan IOFC). At the end of December 2003, there were 25 commercial banks (including Bank Islam Malaysia Berhad and Bank Muamalat Malaysia Berhad), and there were also 36 representative offices of foreign banks. The banking sector also includes 11 finance companies, 10 merchant banks, 7 discount houses, and also 53 offshore banks in the Labuan International Offshore Financial Centre (Labuan IOFC).[20]

---

[18] Ibid., p. 67.
[19] Ibid., p. 68.
[20] Central Bank of Malaysia, *Monthly Statistical Bulletin*, 2004, p. 22.

Table 3.2
Assets of the financial system (growth and as percentage of financial system)

	Growth (% per annum)			RM billion			As % of Financial System		
	1988-1997 (Avg)	1998	1988-1998 (Avg)	1987	1998	2003	1987	1998	2003
Banking System[1]	19.2	-5.6	16.7	140.6	766.9	1,046.7	69.5	70.8	66.9
Bank Negara Malaysia	16.2	14.5	16.1	24.2	124.7	200.8	12.0	11.5	12.8
Banking Institutions	19.7	-8.8	16.7	113.4	622.2	815.7	56.1	57.4	54.1
Commercial Banks[2]	18.9	-5.4	16.5	85.8	459.3	629.6	42.4	42.3	40.3
Finance Companies	21.8	-18.9	17.3	21.3	123.6	142.0	10.5	11.4	9.1
Merchant Banks	21.5	-11.4	18.0	6.3	39.3	44.1	3.1	3.6	2.8
Discounts Houses	21.4	-4.6	18.7	3.0	20.0	30.2	1.5	1.8	1.9
Non-Bank Financial Intermediaries	17.2	8.5	16.4	61.6	316.9	517.3	30.5	29.2	33.1
Provident & Pension Funds	15.4	12.6	15.2	36.8	164.2	266.4	18.2	15.1	17.0
Insurance Funds	18.6	11.1	17.9	6.4	39.3	81.3	3.2	3.6	5.2
Development Finance Institutions	12.5	28.0	13.8	4.8	19.8	45.0	2.4	1.0	2.9
Savings Institutions	13.3	-4.2	11.6	5.4	18.1	34.1	2.7	1.6	2.2
Other Non-Bank Financial Intermediaries	25.0	-1.6	22.3	8.3	75.5	90.5	4.1	6.9	5.8
Total Assets	18.6	-1.8	16.6	202.2	1,083.8	1,564.0	100	100	100

1. Excludes Offshore Banks in Labuan IOFC.
2. Includes Bank Islam Malaysia Berhad.

Sources: Compiled by the author using data from the *Central Bank and the Financial System-A Decade of Change, 1989-1999*, Bank Negara Malaysia, 1999, p.68.
Compiled by author from www.bnm.gov.my/index.php?ch=109&pg=294&mth=5&yr=2004, *Monthly Statistical Bulletin*, Bank Negara Malaysia.

The share of total financial system assets held by the banking system (excluding offshore banks in the Labuan IOFC) rose from 69.5 per cent at the end of 1987 to 70.8 per cent at the end of 1998, as shown in Table 3.2. This overall increase was due mainly to the rapid expansion of the assets of the largest group of institutions in the banking system, namely the banking institutions, which grew at an average annual rate of 19.7 per cent during the period 1988-1997 as a result of strong growth in loans and advances. However, in 1998 the regional financial crisis took its toll on the banking system, and its assets declined by 5.6 per cent, reflecting sharp declines in the assets of the finance companies and merchant banks.

(b) Non-bank financial intermediaries

The non-bank financial intermediaries comprise five groups of institutions, namely the provident and pension funds, insurance companies (including *takaful*), the development financial institutions, the savings institutions, and a group of other non-bank financial intermediaries. The non-bank financial institutions are supervised by various government departments and agencies (excluding the insurance companies, which were brought under the supervision of Bank Negara effective 1 May 1988), as shown in Figure 3.1.

Table 3.2 shows that the share of the assets of the non-bank financial intermediaries declined slightly from 30.5 per cent of the total assets of the financial system at the end of 1987 to 29.2 per cent at the end of 1998. This decline was due mainly to the decline in the shares of the provident and pension funds and the savings institutions. For example, the growth per cent per annum of savings institutions declined from 13.3 per cent during the 1988-1997 period to 4.2 per cent in 1998. This was also a result of the Asian financial crisis which began in mid-1997.

3.4.2 The financial markets

The financial markets in Malaysia comprise the money and foreign exchange markets, the capital markets, the derivatives markets and the offshore markets.

(a) Money and foreign exchange markets

The money market is an avenue for the channelling of short-term funds with the maturities typically not exceeding 12 months. It provides a ready source of funds for market participants facing temporary shortfalls in funding, while at the same time providing short-term investment outlets for those with temporary surplus funds. The interbank players in the money markets include the commercial banks, merchant banks, discount houses and eligible finance companies.

The foreign exchange market is the market for the trading of foreign currencies against the *Ringgit* or against other foreign currencies. The average monthly volume of interbank foreign exchange transactions increased from RM20.7 billion in 1987 to a

peak of RM109.9 billion in 1997, before moderating to RM31.6 billion in the first nine months of 1999 because of the Malaysian financial crisis.[21]

(b) The capital markets

The capital markets are markets for raising long-term funds and comprise the equity and bond markets. The equity market provides the avenue for corporations to raise funds by issuing stocks and shares, while secondary market trading in stocks and shares is conducted through stockbrokers on the Bursa Malaysia Berhad (formerly known as Kuala Lumpur Stock Exchange (KLSE). The bond markets, on the other hand, are those through which both the private and public sectors can raise funds, by issuing private debt securities and government securities.

(c) The offshore markets

The Labuan International Offshore Financial Centre (Labuan IOFC) is a new addition to the financial landscape of Malaysia, established in October 1990. The Labuan IOFC is aimed at enhancing the attractiveness of Malaysia as a regional financial centre to complement and supplement the onshore financial centre in Kuala Lumpur.

The Labuan IOFC is an integrated offshore centre which provides a wide range of offshore products, including banking, insurance and insurance-related activities, trust business, fund management, investment holding, Islamic financing and company management services. In addition to these, at the same time, the Labuan IOFC forms a part of the broad national strategy to spread and diversify the development and growth opportunities of the nation, focusing on the further development of industries and services in East Malaysia (i.e., Sabah and Sarawak).

3.5 THE BANKING INSTITUTIONS

The banking institutions in Malaysia can be generally divided into main three parts, namely, the commercial banks, finance companies and merchant banks, as shown in Table 3.2.

---

[21] Ibid., p. 70.

3.5.1 The commercial banks

Table 3.2 shows that the commercial banks (including Bank Islam) make up the largest component of the banking institutions and also of the financial system. They are the largest and most significant provide's of funds in the banking system, with total assets amounting to RM629.6 billion in 2003, compared with RM85.8 billion in 1987, representing approximately 61.0 per cent and 60.2 per cent of the total assets of the banking system respectively. The assets of the commercial banks also represented 42.4 and 40.3 per cent of the total assets of the financial system in 1987 and 2003 respectively.

The commercial banks enjoy the widest scope of permissible activities, apart from some restrictions on investments in immovable property and shares. The commercial banks are also able to engage in a full range of banking services; however, in practice Bank Negara has restricted commercial banks from moving into core finance company and merchant banking activities such as hire purchase, leasing, factoring and corporate advisory services associated with the issuance of shares and the listing of companies. In line with the recommendations of the Bank for International Settlements (BIS), the commercial banks are required to observe a risk-weighted capital ratio of 8 per cent.

3.5.2 The finance companies

The finance companies form the second largest component of the banking system. They are the second largest and most significant provides of funds in the banking system, with total assets amounting to RM21.3 billion in 1987 and RM142.0 billion in 2003. These represented approximately 10.5 per cent and 9.1 per cent of the total assets of the financial system in 1987 and 2003 respectively, as shown in Table 3.2.

The finance companies are primarily engaged in providing loans for the purchase of consumer durables, mainly vehicles on hire purchase terms. Other forms of credit offered include personal loans, refinancing, and factoring, leasing and other types of commercial lending. These companies are allowed to accept savings and fixed deposits from the public, but are prohibited from providing demand deposit facilities. They tend to charge higher rates on loans than the commercial banks but offer higher return rates on their deposits (i.e., savings and fixed deposits).

3.5.3 The merchant banks

The merchant banks constitute the third component of the banking system. The assets of the merchant banks accounted for approximately RM6.3 billion and RM44.1 billion in 1987 and 2003 respectively. These represented about 3.1 per cent and 2.8 per cent of the assets of the financial system in 1987 and 2003 respectively. However, because of the financial crisis in mid-1997, the growth per cent per annum of the merchant banks fell to 11.4 per cent in 1998, as shown in Table 3.2.

The merchant banks are primarily engaged in fulfilling the demand for a full range of specialised financial services. The merchant banks offer a full range of fee-based specialised services relating to all aspects of corporate advisory services, such as the underwriting of share issues, acting as share registrar, mergers and acquisitions; the promotion of new investment and joint ventures and the undertaking of feasibility studies.

However, in recent years the merchant banks have increasingly developed more sophisticated financial instruments and have undertaken the management of syndicated loans and the provision of acceptances and guarantees. They have also provided feasibility studies for potential investors and advice on the relocation of industries to Malaysia.

3.6 THE ROLE OF THE FINANCIAL SYSTEM

The financial system performs an important role and an intermediation function in the Malaysian economy in general, as well as in the payments system. A well-functioning and efficient financial system is vital to ensuring the effective and efficient conduct of monetary policy, as a poor performance by the financial system (i.e., financial institutions and markets), can be highly costly to society.

In particular, if a banking system is prone to instability, depositors may avoid placing deposits in the banking system, thus reducing the availability of funds to borrowers and the efficiency of the intermediation process. In addition, financial instability can also weaken the ability of the financial institutions to make credit available; during a recession in particular, this may prolong the recession and frustrate efforts to revive the economy.

The intermediation function of the Malaysian financial system may be examined and analysed by means of an examination of the sources and uses of funds.

3.6.1 Sources of funds

The Malaysian financial systems have mobilised their funds mainly in the form of deposits, such as demand, savings and fixed deposits. Other sources of funds included contractual savings, such as insurance, provident and pension funds, as well as capital and reserves, funds obtained from other financial institutions and currency, as shown in Table 3.3.

Table 3.3
Sources of funds of the financial system

	1988		1993		1998		2003	
Sources of Funds	RM million	Per cent (%)	RM million	Per cent (%)	RM million	Per cent (%)	RM Million	Per cent (%)
Capital, reserves & profit	17,866	7.2	41,936	7.0	102,445	9.0	145.5	9.3
Currency	9,037	3.7	14,649	2.4	20,547	1.8	29.4	2.2
Demand deposits[1]	19,029	8.0	33,180	5.8	55,640	5.1	70.0	4.5
Other deposits[2]	93,347	37.7	198,014	34.8	457,954	42.3	607.4	38.8
(of which):								
Public sector	25,139	10.2	28,351	4.7	40,393	3.6	61.4	3.9
Other financial Institutions[3]	18,615	7.5	38,868	6.5	103,870	9.1	121.4	7.8
Private sector	49,328	19.9	127,237	21.2	305,698	26.9	412.2	26.4
Foreign	274	0.1	3,558	0.6	7,993	0.7	12.4	0.7
Borrowings	5,612	2.3	5,768	1.0	14,400	1.3	25.6	1.5
Funds from other Financial institutions	12,208	4.9	56,403	9.4	66,074	5.8	177.1	11.3
Domestic	7,567	3.1	27,014	4.5	39,600	3.5	95.5	6.1
Foreign	4,641	1.9	29,389	4.9	26,474	2.3	81.6	5.2
Insurance, provident & Pension funds	47,438	19.2	99,653	16.6	189,791	16.7	286.4	18.1
Other liabilities	32,913	13.2	119,460	19.9	176,998	15.6	223.0	14.3
Total liabilities	237.5	100.0	569.1	100.0	1,083.8	100.0	1,564.0	100.0

1. Includes Bank Islam Malaysia Berhad.
2. Equals savings, fixed and other deposits + negotiable instruments of deposit (NIDs) + repos.
3. Effective 1998, the statutory reserves of the banking institutions have been reclassified as "Funds from other financial institutions" rather than "Other deposits from other financial institutions".

Sources: Compiled by the author using data from the *Central Bank and the Financial System-A Decade of Change, 1989-1999*, Bank Negara Malaysia, 1999, p. 74.
Compiled by the author from www.bnm.gov.my/index.php?ch=109&pg=294&mth=5&yr=2004, *Monthly Statistical Bulletin*, Bank Negara Malaysia.

Table 3.3 shows that the bulk of the funds mobilised by the financial system during the period 1988-2003 was in the various types of deposits. Table 3.3 also shows that the total deposits (demand deposits plus other deposits) accounted for about 40.6 per cent or RM231.2 billion in 1993, increasing to 43.3 per cent or RM677.4 billion in 2003. In line with the robust economic growth, total deposits placed with the financial institutions grew at an average annual rate of 20.3 per cent during the period 1988-2003.

In terms of the deposits type, demand deposits accounted for 8.0 per cent of the financial system in 1988, declining to 4.5 per cent in 2003 because of the increases in time deposits. Meanwhile, other deposits, comprising savings and fixed deposits, negotiable instruments of deposit (NIDs) and repos, registered an increase from RM93.3 billion in 1988 to RM607.4 billion in 2003. This represents an increase from 37.7 per cent of the financial system in 1988 to 38.8 per cent in 2003.

These other deposits were in the main placed by the private sector (which accounted for an average of 63 per cent of placements of other deposits), as a result of higher incomes of individuals and improved performance of business enterprises in tandem with the generally robust economic growth during the period.[22]

3.6.2 Uses of funds

In term of their uses, the funds mobilised by the financial system were channelled into the economy principally in the form of loans and advances, and investment in securities, as shown in Table 3.4.

Loans and advances are the biggest uses of funds by the financial system, and recorded an increase from RM100.1 billion in 1988 to RM648.1 billion in 2003. This represents an increase from around only 40.5 per cent of the financial system in 1988 to 41.4 per cent in 2003. This impressive rate of increase reflected the rapid economic growth experienced by Malaysia during the period 1988 to mid-1997, however, the financial crisis which started in mid-1997 led to a sharp decrease in loans from RM536.4 billion in 1997 to RM481.7 billion in 1998, a drop of about 8.0 per cent.[23]

Table 3.4 shows that investments by the financial institutions in securities, including corporate and government securities, are the second largest uses of funds in the financial system. Their share of uses of funds was RM65.7 billion in 1988, rising to RM349.7

---

[22] From the *Central Bank and the Financial System in Malaysia-A Decade of Change, 1989-1999*, Central Bank of Malaysia, 1999, p. 75.

[23] Economic Planning Unit, *White Paper on the Status of Issues Arising from the Crisis-Part III*, www.epu.jpm.my/. (11th October, 2003)

billion in 2003, representing approximately 26.5 per cent and 22.3 per cent of the total uses of funds in the financial system, respectively.

Other uses of sources in the financial system include deposits with other financial institutions, gold and foreign exchange reserves, other assets and currency.

Table 3.4
Uses of funds in the financial system

	1988		1993		1998		2003	
Uses of funds	RM million	Per cent (%)	RM million	Per cent (%)	RM million	Per cent (%)	RM million	Per cent (%)
Currency	905	0.4	1,597	0.3	3,224	0.3	6.5	0.4
Deposits with other financial institutions	33,479	14.1	115,627	20.3	151,578	13.9	225.9	14.4
Domestic	28,418	12.0	108,768	19.1	136,138	12.5	190.9	12.2
Foreign	4,945	2.1	7,859	1.4	15,430	1.9	35.0	2.2
Bills	5,962	2.6	7,825	1.3	14,648	1.3	21.2	1.5
Treasury	4,472	1.7	2,737	0.5	3,796	0.3	5.7	0.4
Commercial	1,490	0.6	5,060	0.9	10,852	1.0	15.6	1.1
Loans and advances	100,084	40.5	209,802	36.9	481,712	44.4	648.1	41.4
Public sector	4,262	1.7	2,860	0.5	5,567	0.5	24.4	1.6
Other financial institutions	4,264	1.7	3,767	0.7	26,995	2.5	44.3	2.8
Private sector	90,582	36.6	201,787	35.4	446,518	41.2	569.5	36.4
Foreign	1,016	0.4	1,388	0.2	2,632	0.2	9.9	0.6
Securities	65,717	26.5	105,174	18.5	221,569	20.4	349.7	22.3
Malaysian government	52,349	21.1	61,017	10.7	69,575	6.4	105.6	6.8
Foreign	2	0.0	69	0.0	1,289	0.1	13.2	0.8
Corporate	13,366	5.4	41,672	7.3	139,781	12.9	215.7	13.8
Others	0	0.0	2,427	0.4	10,924	1.0	15.2	1.0
Gold & foreign exchange reserves	18,271	7.4	75,309	13.2	95,368	8.9	166.3	10.6
Other assets	17,390	7.1	53,729	9.4	115,750	10.7	176.3	11.3
Total Assets	237.5	100.0	569.1	100.0	1,083.8	100.0	1,564.0	100.0

Sources: Compiled by the author using data from the *Central Bank and the Financial System in Malaysia-A Decade of Change, 1989-1999*, Bank Negara Malaysia, 1999, p. 74.
Compiled by the author from www.bnm.gov.my/index.php?ch=109&pg=294&mth=5&yr=2004, *Monthly Statistical Bulletin*, Bank Negara Malaysia.

3.7 CONVENTIONAL BANKING SERVICES

Deposit taking is the major source of funds in Islamic and conventional banks. However, it is important to underline the fact that the conventional banks pay interest on deposits, but that depositors share the profits with Islamic banks. Conventional banks in Malaysia currently offer the following main type of deposit account to their depositors:

(a) demand deposits (b) savings deposits (time deposits), and (c) fixed deposits.

(a) Demand deposits

Generally, the demand deposit gives a low return (interest rate) to depositors. It is a safekeeping arrangement between the depositors and the banks. However, the banks allow the depositors to withdraw their money at any time and at the same time the depositors permit the bank to use their money.

Conventional banks issue cheque books and debit cards to the demand deposit holders and provide a broad range of payment facilities, i.e., clearing mechanisms, bank drafts, bills of exchange, and other services. More often than not, the banks do not charge for these services. The total deposits and return to depositors (interest rate) in the demand deposits of conventional banks is shown in Table 3.5.

Table 3.5
Total deposits and rate of return (interest rate) of demand deposits in conventional banks, 1983-2001 (RM million)

Year	Conventional Demand Deposits (DDC)	Growth Per cent Per annum	GDP Growth	RD (Interest Rate)	Total Deposits (DDC + TDC)
1983	9,449.7	-	6.2	3.15	28,315.0
1984	10,311.3	9.1	7.8	3.25	31,090.7
1985	11,900.5	15.4	-1.1	3.05	34,452.3
1986	12,666.7	6.4	1.2	3.00	36,440.0
1987	16,466.6	29.9	5.4	2.50	42,386.0
1988	18,814.9	14.3	9.9	3.00	47,745.9
1989	20,610.1	9.5	9.1	3.10	60,382.3
1990	21,196.8	2.8	9.0	3.03	64,745.8
1991	23,850.9	12.5	9.5	3.10	75,593.1
1992	24,527.1	2.8	8.9	3.08	82,938.7
1993	32,772.8	33.6	9.9	3.32	97,969.7
1994	37,002.2	12.9	9.2	3.05	105,734.3
1995	38,410.0	3.8	9.8	3.20	112,720.6
1996	49,442.6	28.7	10.0	3.26	144,573.1
1997	51,464.4	4.1	7.5	3.36	153,925.7
1998	53,272.0	3.5	-7.5	3.44	157,132.9
1999	55,162.1	3.5	4.3	3.13	159,747.2
2000	59,042.5	7.0	5.2	3.00	165,386.2
2001	62,107.8	5.2	3.1	3.40	169,639.2

Sources: Compiled by the author using data from the *Monthly Statistical Bulletin*, Central Bank of Malaysia. (Various issues)
Compiled by the author using data from the *Outline Perspective Plan*, Economic Planning Unit, Government of Malaysia. (Various issues)
Compiled by the author using data from the *International Financial Statistics*, International Monetary Fund, IMF Statistics Department, IMF, Washington, D.C. USA.

Table 3.5 illustrates that the growth per cent per annum of demand deposits in conventional banks declined from 9.1 per cent in 1984 to 6.4 per cent in 1986 and from 28.7 per cent in 1996 to 3.5 per cent in 1998. This was due first and foremost to the decline in the growth of Malaysia's gross domestic product to 1.1 per cent in 1985, resulting from the decline in world commodity prices (i.e., of rubber, cocoa and palm oil). The second cause of the decline was the Malaysian financial crisis beginning in mid-1997 and, as a result of this, Malaysian gross domestic product contracted by 7.5 per cent in 1998, compared with a 10 per cent growth rate in 1996 (see Table 3.5). The growth of conventional demand deposits between 1988 and 1996 is higher, due to the robust economic growth during that period. This is shows that the changes in demand deposits are related and reflected of the GDP trends. In other words this is because of the income factors.

(b) Savings deposits

Savings deposits in conventional banks are different from demand deposits in that there are certain restrictions on how much can be withdrawn and when. With these deposits the depositors will earn a rate of return (interest rate), and this is usually higher than with demand deposits. However, the rate of return (interest rate) offered to depositors depends on how long they keep their money in the banks.

The longer they keep their money in, the higher the rate of return they can earn. The periods available are usually one month, three months, sixth months, nine months and twelve months. With these savings deposits (savings accounts) usually the depositors must give the bank notice before they can withdraw their money.

The total deposits and the rate of return (interest rate) to depositors of savings deposits (saving accounts) are shown in Table 3.6. Table 3.6 illustrates that the total savings deposits were RM20.7 billion in 1984, increasing to RM23.7 billion in 1986, representing 10.1 per cent and 5.4 per cent growth per annum respectively. The percentage decline in growth per annum parallels the contraction of gross domestic product (GDP) by 1.1 per cent in 1985. This was due in particular to the decline in world commodity prices (i.e., of rubber, palm oil and cocoa), since during that time Malaysia's economy heavily depended on the production and export earnings from these commodities.

Table 3.6
Total deposits and rate of return (interest rate) of savings deposits (time deposits) in conventional banks, 1983-2001 (RM million)

Year	Conventional Time Deposits	Growth Per cent Per annum	GDP Growth	RT (Interest Rate)	Total Deposits (TDC + DDC)
1983	18,865.3	-	6.2	7.00	28,315.0
1984	20,779.4	10.1	7.8	8.25	31,090.7
1985	22,551.8	8.5	-1.1	6.50	34,452.3
1986	23,773.3	5.4	1.2	6.50	36,440.0
1987	25,919.4	9.0	5.4	4.50	42,386.0
1988	28,931.0	11.6	9.9	4.00	47,745.9
1989	39,772.2	37.5	9.1	4.53	60,382.3
1990	43,549.0	9.5	9.0	4.85	64,745.8
1991	51,742.2	18.8	9.5	5.43	75,593.1
1992	58,411.6	12.9	8.9	5.34	82,938.7
1993	65,196.9	11.6	9.9	4.63	97,969.7
1994	68,732.1	5.4	9.2	4.99	105,734.3
1995	74,310.6	8.1	9.8	4.54	112,720.6
1996	95,130.5	28.0	10.0	4.70	144,573.1
1997	102,461.3	7.7	7.5	5.10	153,925.7
1998	103,860.9	1.4	-7.5	5.23	157,132.9
1999	104,585.1	0.7	4.3	4.87	159,747.2
2000	106,325.7	1.7	5.2	4.50	165,368.2
2001	107,531.4	1.1	3.1	4.45	169,639.2

Sources: Compiled by the author using data from the *Monthly Statistical Bulletin*, Central Bank of Malaysia. (Various issues)
Compiled by the author using data from the *Outline Perspective Plan*, Economic Planning Unit, Government of Malaysia. (Various issues)

From the table, again we can see that in 1996 total savings deposits were RM95.1 billion, increasing to RM104.5 billion in 1999; however, in terms of percentage growth per annum they declined from 28.0 per cent in 1996 to 0.7 per in 1999. This decline was a result of the contraction of Malaysia's economy by 7.5 per cent in 1998 due to the Malaysian financial crisis. In other words, it appears that there is a correlation between savings deposits and Malaysian gross domestic product growth.

The time deposits and demand deposits ratio and interest rate differential between time deposits and demand deposits is shown in Table 3.7. Table 3.7 illustrates that the ratio between time deposits and demand deposits in conventional banks are moderate, which fluctuated between 1.70 and 2.40. From the table, again we can see that the differential between time deposits and demand deposits were 3.85 in 1983, increasing to 5.00 in 1984; however, after that year the differential shows the decreasing trend, which was from 5.00 in 1984 to 1.00 in 1988. In addition after the 1988, the differential of interest rates between time deposits and demand deposits are moderate between 1.50 and 2.40, except for the 2001, which the differential is 1.05.

Table 3.7
The Time Deposits and Demand Deposits Ratio and the Interest Rate Differential between Time Deposits and Demand Deposits, 1983-2001 (RM million)

Year	Conventional Time Deposits (TDC)	Conventional Demand Deposits (DDC)	Ratio (TDC/DDC)	Time Deposits Interest Rate (RT)	Demand Deposits Interest Rate (RD)	Differential (RT – RD)
1983	18,865.3	9,449.7	1.99	7.00	3.15	3.85
1984	20,779.4	10,311.3	2.02	8.25	3.25	5.00
1985	22,551.8	11,900.5	1.90	6.50	3.05	3.45
1986	23,773.3	12,666.7	1.88	6.50	3.00	3.50
1987	25,919.4	16,466.6	1.60	4.50	2.50	2.00
1988	28,931.0	18,814.9	1.54	4.00	3.00	1.00
1989	39,772.2	20,610.1	1.93	4.53	3.10	1.43
1990	43,549.0	21,196.8	2.05	4.85	3.03	1.82
1991	51,742.2	23,850.9	2.17	5.43	3.10	2.33
1992	58,411.6	24,527.1	2.38	5.34	3.08	2.26
1993	65,196.9	32,772.8	1.99	4.63	3.32	1.31
1994	68,732.1	37,002.2	1.86	4.99	3.05	1.94
1995	74,310.6	38,410.0	1.93	4.54	3.20	1.34
1996	95,130.5	49,442.6	1.92	4.70	3.26	1.44
1997	102,461.3	51,464.4	1.99	5.10	3.36	1.74
1998	103,860.9	53,272.0	1.95	5.23	3.44	1.79
1999	104,585.1	55,162.1	1.90	4.87	3.13	1.74
2000	106,325.7	59,042.5	1.80	4.50	3.00	1.50
2001	107,531.4	62,107.8	1.73	4.45	3.40	1.05

Sources: Compiled by the author using data from the *Monthly Statistical Bulletin*, Central Bank of Malaysia. (Various issues)
Compiled by the author using data from the *International Financial Statistics*, International Monetary Fund, IMF Statistics Department, IMF, Washington, D.C. USA. (Various issues)

(c) Fixed deposits

Generally, the fixed deposits (fixed accounts) in the conventional bank give the highest rate of return to depositors among the three types of deposit accounts. The banks promise depositors a predetermined fixed return (interest rate) on their investment depending on the agreed maturity of the investment made by the customers. The maturity of the investment in fixed deposits in Malaysia is usually three months, sixth months, nine months or 12 months, however, the banks will usually give the rate of return (interest rate) on that terms. It is not necessary to discuss this point in detail as it will not be included in the main body of the research. However, the differences between the fixed deposits of conventional banks and that on investment deposits of Islamic banks will be discussed in chapter four.

3.8 THE RELATIONSHIP BETWEEN BANK DEPOSITS AND MONETARY AGGREGATES/MONEY SUPPLY

The relationship between bank deposits and monetary aggregates (money supply) will be discussed under two categories, namely the relationship between conventional bank deposits and monetary aggregates (money supply), and that of Islamic bank deposits and monetary aggregates (money supply). In general, monetary aggregates (money supply) may be classified into three main categories, namely M1, M2 and M3. These three different types of monetary aggregate (money supply) may be defined and discussed as follows:

(i) M1 is the currency in circulation plus demand deposits;

(ii) M2, is M1 plus narrow quasi-money. Narrow quasi-money includes savings deposits, fixed deposits, repos, negotiable instruments of deposits (NIDs), and foreign currency deposits; and

(iii) M3 is M1 plus M2, and deposits placed with other banking institutions. M3 is sometimes also called broad money.

The conventional bank deposits and monetary aggregates (money supply) can be seen in Table 3.8. From this table, we can see the positive relationships between M1 and M2 and conventional demand deposits (DDC) and conventional time deposits (TDC) respectively. The table also shows that both types of money deposit have positive relationships with not only M1 and M2, but also M3. As Table 3.8 shows, the conventional demand deposits and conventional time deposits have increased year by year, similarly to the trend of increase in the monetary aggregates M1 and M2. For example, in 1983 M1 and M2 were RM13,432.3 million and RM42,264.1 million, increasing to RM25,240.5 million and RM83,902.9 million in 1990. Conventional demand deposits and conventional time deposits also increased from RM9,449.7 million and RM18,865.3 million to RM21,196.8 million and RM43,549.0 million, respectively.

Table 3.8 also shows that the relationship of conventional deposits to monetary aggregates can be discussed in two phases. First, from the beginning of 1983 until 1991, the trend is one of small differences between conventional demand deposits and monetary aggregates (M1). That is, the difference between conventional demand deposits and monetary aggregates (M1) between 1983 and 1991 was less than RM5.0 billion; however, the difference was more than RM5.0 billion after 1992. One reason for the greater difference after the 1992 period was that the Malaysian economy was growing at a faster rate (more than 7.5 per cent) which meant that Malaysians needed more cash for transaction purposes. This trend also shows similar consequences in the

relationship between conventional time deposits and monetary aggregates (M2): after 1992, the difference between conventional time deposits and monetary aggregates more than doubled.

Table 3.8
The conventional bank deposits and monetary aggregates/money supply, 1983-2001 (RM million)

Year	DDC	TDC	M1	M2	M3
1983	9,449.7	18,865.3	13,432.3	42,264.1	51.705.7
1984	10,311.3	20,779.4	14,356.7	47,733.2	59.772.8
1985	11,900.5	22,551.8	14,578.9	50,412.2	65,607.7
1986	12,666.7	23,773.3	15,957.0	56,096.8	71,399.9
1987	16,466.6	25,919.4	18,768.2	59,771.7	74,891.7
1988	18,814.9	28,931.0	20,839.8	64,072.1	80,987.6
1989	20,610.1	39,772.2	22,948.7	74,392.8	97,668.3
1990	21,196.8	43,549.0	25,240.5	83,902.9	115,435.7
1991	23,850.9	51,742.2	27,903.0	96,092.5	133,120.8
1992	24,527.1	58,411.6	30,895.1	114,480.9	159,177.9
1993	32,772.8	65,196.9	41,792.3	139,800.0	196,611.1
1994	37,002.2	68,732.1	46,470.9	160,385.6	222,329.8
1995	38,410.0	74,310.6	51,923.9	198,873.3	271,948.4
1996	49,442.6	95,130.5	60,585.3	238,208.6	329,707.6
1997	51,464.4	102,461.3	63,385.1	292,217.1	390,809.3
1998	53,272.0	103,860.9	65,187.7	294,849.5	393,796.6
1999	55,162.1	104,585.1	73,447.2	337,138.2	434,590.1
2000	59,042.5	106,325.7	78,221.0	354,706.7	456,501.0
2001	62,107.8	107,531.4	82,670.1	358,259.5	462,366.0

Sources: Compiled by the author using data from the *Monthly Statistical Bulletin*, Central Bank of Malaysia. (Various issues)
Compiled by the author using data from the *Central Bank and the Financial System in Malaysia – A Decade of Change, 1989-1999*, Central Bank of Malaysia, 1999, pp. 610-662.

The relationship between Islamic bank deposits and monetary aggregates (money supply) can be seen in Table 3.9. As shown in this table, the Islamic bank deposits (Islamic demand deposits, Islamic time deposits, and Islamic investment deposits) showed a similar pattern to those of conventional banks. In 1983, the monetary aggregates, M1, M2, and M3, were RM13,432.3 million, RM42,264.1 million, and RM51,705.7 million, increasing to RM46,470.9 million, RM160,385.6 million, and RM222,329.8 million respectively in 1994. Islamic demand deposits, Islamic time deposits, and Islamic investment deposits also increased from RM85.0 million, RM125.0 million, and RM254.00 million to RM1,425.9 million, RM1,491.0 million, and RM1,673.2 million respectively. This shows the positive relationship between Islamic bank deposits and the monetary aggregates M1, M2, and M3.

Table 3.9
The Islamic bank deposits and monetary aggregates/money supply, 1983-2001 (RM million)

Year	DDI	TDI	IID	M1	M2	M3
1983	85.0	125.0	254.0	13,432.3	42,264.1	51.705.7
1984	127.1	195.1	331.1	14,356.7	47,733.2	59,772.8
1985	139.5	250.3	365.0	14,578.9	50,412.2	65,607.7
1986	168.2	290.7	406.5	15,957.0	56,096.8	71,399.9
1987	189.2	317.3	515.2	18,768.2	59,771.7	74,891.7
1988	213.7	342.2	652.7	20,839.8	64,072.1	80,987.6
1989	221.2	350.3	667.1	22,948.7	74,392.8	97,668.3
1990	231.8	275.3	672.6	25,240.5	83,902.9	115,435.7
1991	236.1	322.6	687.1	27,903.0	96,092.5	133,120.8
1992	341.2	334.3	667.8	30,895.1	114,480.9	159,177.9
1993	407.5	421.1	784.3	41,792.3	139,800.0	196,611.1
1994	1,425.9	1,491.0	1,673.2	46,470.9	160,385.6	222,329.8
1995	1,303.9	1,347.6	1,178.4	51,923.9	198,873.3	271,948.4
1996	1,720.9	1,796.8	4,525.9	60,585.3	238,208.6	329,707.6
1997	1,875.8	2,114.2	4,865.5	63,385.1	292,217.1	390,809.3
1998	2,368.4	4,572.3	6,732.8	65,187.7	294,849.5	393,796.6
1999	2,959.7	5,673.6	15,867.5	73,447.2	337,138.2	434,590.1
2000	4,560.4	6,763.4	19,929.8	78,221.0	354,706.7	456,501.0
2001	5,380.7	7,307.7	25,676.3	82,670.1	358,259.5	462,366.0

Sources: Compiled by the author using data from the *Monthly Statistical Bulletin*, Central Bank of Malaysia. (Various issues)
Compiled by the author using data from the *Central Bank and the Financial System in Malaysia – A Decade of Change, 1989-1999*, Central Bank of Malaysia, 1999, pp. 610-662.

Table 3.9 shows that the development of Islamic bank deposits and their relationship to monetary aggregates can be explained in two phases. First, from the beginning of 1983 until 1993, the trend is one of slow increase in Islamic demand deposits, Islamic time deposits, and Islamic investment deposits. There are two main reasons for this situation, which are as follows:

(i) It appears that the development of deposits in Islamic banks does not parallel the development of the monetary aggregates, even though their trends are positive. In other words, the development of deposits in Islamic banks does not follow the development of the conventional movement of monetary aggregates. This means that the situation in Islamic banks deposits very much depends on the behaviour of the depositors and their relations with the banks.

(ii) During that period there was only one Islamic bank offering Islamic products and services, namely, Bank Islam Malaysia Berhad (BIMB). At the same time, the bank had a limited number of branches, limited numbers of qualified staff and a limited infrastructure.

Generally speaking, however, from the beginning of 1993 onwards, the trend in deposits shows quite a sharpe increase, because at that time Bank Negara introduced the Skim Perbankan Tanpa Faedah (SPTF) (in March 1993). This scheme allowed conventional banking institutions to offer Islamic products and services using their existing infrastructure, including staff and branches, and at the same time the government and the banks guaranteed the deposits of depositors in the Islamic bank.

In general, both conventional and Islamic bank deposits were shown to be positively related to monetary aggregates (money supply).

3.9 MONETARY POLICY IN MALAYSIA

Bank Negara Malaysia (BNM), as the nation's Central Bank, is entrusted with the responsibility for the formulation and implementation of monetary policy in order to maintain price stability. In achieving this objective, a key element is to ensure an efficient monetary transmission process. Bank Negara, therefore, constantly reviews the monetary policy framework to ensure that it remains relevant amid the dynamic changes occurring in the financial and economic environment.

Indeed, the early 1990s marked a major milestone in the conduct of monetary policy, which saw significant changes in terms of strategies, approaches and instruments. The removal of credit ceilings and the liberalisation of interest rates in the late 1970s had paved the way for greater financial sector reforms. Reinforced by the increased globalisation of financial markets towards the end of 1980s, the deregulation of the financial sector precipitated further changes in the monetary policy framework of Malaysia.

3.9.1 The evolution of monetary policy in Malaysia

The evolution of a monetary policy framework may be broadly characterised by the following developments:

3.9.1.1 The shift in monetary policy strategy from monetary targeting towards interest rate targeting (towards the mid-1990s)

Prior to the mid-1990s, monetary policy strategy had been based on targeting monetary aggregates. This is an internal strategy and was not formally announced to the public. The deployment of this strategy was based on evidence that monetary

aggregates were closely linked to the ultimate objectives of monetary policy. In a correction test conducted using quarterly data from 1980-1992, monetary growth (M3) was shown to be positively and highly correlated with inflation. Given that price stability was the ultimate objective of monetary policy, monetary targeting was seen as suitable in the money market and was carefully monitored and judiciously influenced by the Bank Negara, consistent with the monetary growth target.

This was to ensure that the supply of liquidity was sufficient to meet the demands of the economy, consistent with Bank Negara monetary policy objective of price stability. Monetary targeting, therefore, was aimed at ensuring that the excess liquidity did not translate into an acceleration in loans, which would in turn expand the money supply beyond its target rate and fuel inflation. Up until 1987, M1 was the main policy target. However, with financial liberalisation and innovation, Bank Negara subsequently placed greater importance on the broad monetary aggregate, M3, as the policy target.

The relationship between monetary aggregates and nominal gross domestic product (GDP) in Malaysia appeared to be insufficiently stable for monetary aggregates to provide a robust indicator of future inflation. Consequently, towards the mid-1990s, Bank Negara shifted its focus from monetary targeting to interest rate targeting. Bank Negara, nevertheless, still monitors very closely monetary aggregates, credit growth, and other economic and monetary indicators. These include price developments (including asset prices) and indicators of consumption and investment. Similar experiences have also been observed in other economies.

Many economies have also shifted away from monetary targeting to interest rate targeting, inflation targeting or exchange rate targeting. The shifting away from monetary targeting reflected the common problem faced by central banks, that the rapid evolutions in the economy and the financial system, amidst greater globalisation, have made it increasingly difficult to target a particular monetary variable to achieve price stability. Today, very few central banks continue to attach great importance to monetary targeting in the conduct of monetary policy.[24]

In Malaysia, the shift in monetary policy strategy from targeting monetary aggregates to a strategy in which interest rates were the intermediate target was precipitated by four main factors.

i) The liberalisation of the interest rate since 1978 had led to a more market-oriented interest rate determination process;

---

[24] Central Bank of Malaysia, *Monthly Statistical Bulletin*, 2000, pp. 30-34.

ii) Financial deregulation and liberalisation measures undertaken during the decade had enhanced the role of the interest rate in the monetary transmission mechanism;

iii) There was a notable shift in the financing pattern of the economy after the mid-1980s, following structural changes in the economy from an interest-inelastic market (government securities market) to a more interest-sensitive market (bank credit and capital market);

iv) As a matter of policy, Bank Negara had maintained positive real rates of return on deposits. Bank Negara also held the view that interest rate stability was an important policy variable in promoting a stable financial system which would contribute towards a more effective transmission mechanism of monetary policy. Given these developments and an economic environment where investors had become increasingly more interest-sensitive, Bank Negara attached greater importance to interest rate targeting.

The preference for interest rates over other variables such as reserve money in the conduct of monetary policy has been further reinforced by the globalisation of financial markets and global economic integration. A consequence of financial globalisation is the erosion of autonomy in domestic monetary policy formulation, as domestic policies need to take into account external considerations. Hence, movements in interest rates abroad vis-à-vis domestic rates could no longer be totally ignored in monetary policy implementation. At the same time globalisation has made it increasingly difficult to forecast the supply and demand for bank liquidity in the banking system given the volatility of capital flows.

Interest rate targets are also preferred on the basis of their controllability and their measurability. At the same time, controlling a certain quantity of reserve money had, at times, led to greater volatility in very short-term rates do not enhance controllability of monetary aggregates.

In the period 1997-1998, the ability of Bank Negara to influence domestic interest rates based on domestic considerations had been affected by the volatile short-term capital flows and the excessive volatility of the *Ringgit* during the Asian financial crisis. In 1998, given the risk of large capital outflows due to higher interest rates offered in the offshore market to attract *Ringgit* funds for speculation on the *Ringgit*, Bank Negara

was not able to lower interest rates in order to contain a further contraction in the economy.[25]

Amidst the heightened uncertainty of this period, this policy option was itself a potential source of further instability in the exchange rate market. Under these circumstances, Bank Negara introduced selective exchange controls on 1 September 1998 and fixed the *Ringgit* exchange rate on the following day. These measures provided Bank Negara with a greater degree of monetary autonomy in influencing domestic rates to support the economic recovery without having to worry about instability in the *Ringgit* exchange rate.[26]

3.9.1.2 The transition towards more market-based monetary policy implementation procedures

As part of the strategy to enhance the effectiveness of monetary policy in the medium to long run, monetary policy implementation procedures have inclined significantly towards a more market-based system. Bank Negara has embarked on a three-pronged strategy to facilitate this transition process. This consists of:

i) Enhancing transparency;

ii) Improving the payment and settlement arrangements; and

iii) Accelerating regulatory and prudential reforms.

i) Enhancing transparency

Bank Negara has stepped up its efforts to enhance transparency in the conduct of monetary policy by improving Bank Negara communication strategy and by enhancing the dissemination of information to the market. In the wake of rapid developments in the financial sector and the economy as well as the emergence of broader-based market participation in the financial markets, there emerged an increasing risk of misperception of Bank Negara policy changes.

The success of monetary policy depends on its ability to influence expectations in the desired direction, as the policies are affected by changes in market liquidity and interest rates; monetary policy will be more effective if the markets respond correctly and rapidly to Bank Negara policy implementation. Hence, an effective communications strategy becomes important in the conduct of monetary policy.

---

[25] Asia Trade, *Malaysia-Monetary Policy*, www.asiatradehub.com/malaysia/policy.asp/. (11th October, 2003)

[26] Central Bank of Malaysia, The *Central Bank and the Financial System in Malaysia: A Decade of Change_1989-1999*, 1999, pp. 144-145.

Reforms undertaken in 1998 marked a further step towards enhancing the signalling mechanism. While previously the 3-month interbank rate reflected the direction of monetary policy, the market was uncertain as to whether movements in the rate were due to market forces or reflected the policy action of Bank Negara. To provide a clear signal to the market as to the direction of monetary policy, in early 1998 Bank Negara announced its 3-month intervention rate as the policy rate.[27]

ii) Improving payment and settlement arrangements

Bank Negara undertook measures to improve trading, payment and settlement arrangements in order to reduce the potential problems created by the handling of large volumes of securities, as well as the settlement lags, thereby enabling a larger volume of transactions to be undertaken.

iii) Accelerating regulatory and prudential reforms

Bank Negara accelerated both the regulatory and prudential reforms in order to foster an environment conducive to sound credit decisions, to enhance bank soundness, and to improve bank liquidity management. Amongst the measures taken to improve the liquidity management of banking institutions was the introduction of a new liquidity framework, replacing the liquidity requirement imposed on banks. This framework, which is modelled against international best practices on liquidity management, focuses on the efficient matching of assets and liabilities profiles that will enable banks to be better positioned in times of liquidity shocks, and that will allow better utilisation of funds.

For the most part, the transition of the monetary policy framework towards a more market-based approach proceeded at a relatively smooth pace, largely owing to two main factors.

i) The existence of a coherent policy strategy in both financial sector liberalisation and monetary policy reform. In recognition of the fact that financial stability is crucial in the conduct of monetary policy, special emphasis has been placed on policy co-ordination and measures required to strengthen the effectiveness of monetary policy and to maintain stability.

---

[27] Ibid., from www.asiatradehub.com/malaysia/policy.asp/, *Malaysia–Monetary Policy*. (11th October, 2003)

ii) The transition towards a more market-based system was facilitated by the appropriate sequencing of reforms. Bank Negara did not resort to a 'big bang' approach in liberalising the financial sector. Liberalisation was only allowed at a pace that was consistent with the prevailing market conditions and the evolution in the structure of the economy and the financial system. In addition, financial discipline and a prudent fiscal policy contributed positively to macroeconomic stability, which allowed a smooth implementation of financial reforms.

It should be noted that financial sector policy management has moved towards a more market-based approach. Nevertheless, during periods of extreme market volatility, there has been recourse to administrative measures, but these have been temporary in nature. The Malaysian experiences in 1992-1994 and 1997-1998 showed that only during periods of heightened instability in the financial markets did the government resort to selective administrative measures or controls to ensure stability in the markets. The authorities, however, implemented such policies pragmatically and recognised that these moves, while not market-oriented, were necessary to stabilise the financial markets. Malaysia remains committed to the market mechanism and liberalisation and will continue to accelerate efforts to improve monetary policy management in terms of making increasing use of market-based instruments.[28]

3.10 MONETARY POLICY INSTRUMENTS

The general monetary policy of Bank Negara affects alike the conventional banks, the Islamic banks and the Islamic windows. Bank Negara has at its disposal a number of monetary policy instruments. These instruments include amongst others open market operations, direct intervention by Bank Negara to borrow or lend in the inter-bank money market, variations in the statutory reserve requirement (SRR), and direct control of the management of funds e.g. Employees Provident Fund.

In Malaysia, the macroeconomic objective of monetary policy is to promote growth at the highest sustainable rate, consistent with domestic price and exchange rate stability. In working towards this objective, Bank Negara seeks to maintain monetary stability by ensuring that the growth in bank credit and in the money supply are just adequate to accommodate and finance real growth in the economy, without causing inflationary pressures. Since monetary policy operates through the financial markets, Bank Negara

---

[28] Ibid,. p. 148.

must ensure that the economy has a sound banking and financial industry as well as markets which are orderly and efficient.[29]

Bank Negara has also relied on other instruments, notably the centralisation of the Federal Government's surplus balances and the Employees Provident Fund's excess funds at Bank Negara, and variations in the statutory reserve requirement (SRR). The SRR has been adjusted when fundamental developments have taken place, particularly when, for example, conditions that could fuel inflationary pressures or cause a contraction in economic activities are seen as persisting.

When the conventional instruments are ineffective and inadequate in addressing external shocks, Bank Negara, as a last resort, may use selective administrative measures. Such measures, however, are carefully designed so that they will only resolve specific problems without affecting other economic activities and are mainly intended to be used on a temporary basis. As Malaysia is a developing economy, in the conduct of monetary policy great importance has also been attached to the attainment of social objectives, prompting Bank Negara to impose selective lending guidelines for priority sectors.

3.10.1 Money market operations (MMO)

The money market operations can be conducted either through borrowing or lending by Bank Negara in the inter-bank market and also through the usual open market operations[30], which are transacted mainly via the sale and purchase of government securities and other papers, either directly or through repurchase agreements such as (repo)/reverse repo.[31] The absence of a well developed securities market has constrained the more active use of open market operations.

In the 1990s, with the smaller issues of government papers, Bank Negara resorted to direct borrowing/lending as the main instrument to influence the level of interest rates. Bank Negara money market operations are now conducted through principal dealers. This approach allowed Bank Negara to focus on the need for liquidity in the system as a whole, rather than responding to the needs of each individual institution. Only under

---

[29] Executives Meeting of East Asia Pacific Central Banks, *Monetary Policy and the Role of the Central Bank in Malaysia*, www.emeap.org:8084/RedBook/M1/A2.htm/. (13th October, 2003)

[30] Open market operations are broadly defined as the purchase or sale of financial instruments by the Bank Negara, in either the primary market (open market-type operations) or the secondary market (fully-fledged open market operations). Instruments commonly used for this purpose include treasury bills and Bank Negara bills.

[31] International Monetary Fund, *Adopting Indirect Instruments of Monetary Policy*, www.imf.org/external/pubs/ft/fandd/1996/03/pdf/alexande.pdf/. (13th October, 2003)

special circumstances does Bank Negara provide direct access to its rediscount window to individual institutions, including non-principal dealers, in its capacity as the lender of last resort.

Presently, the most important instrument in steering interest rate level and direction is direct borrowing/lending, which is conducted in the form of money market tenders. Its role in influencing interest rates is further reinforced by the intervention rate. While the intervention rate is announced when there is a change in the policy stance, the money market tendering process is conducted on a daily basis. Bank Negara actively deals through the principal dealers (PDs) in its market operations, who then deal with the rest of the money market players. Intervention in the money market by Bank Negara is usually done either in the conventional money market or in the Islamic money market.

The market players will submit their bids/offers through the principal dealers (PDs). Bank Negara may offer either competitive or fixed rate tenders, with the former type being more frequently used in the tendering process. If necessary, Bank Negara will conduct such exercises several times a day. Any residual surplus/deficiency of liquidity in the system will be cleared through the PDs or agent banks, through direct overnight borrowing/overnight lending to ensure sufficient balances in the system to meet settlement obligations. Bank Negara normally focuses its operations within the shorter tenure of one month or less, and occasionally in three-month maturity. Intervention in the money market may be carried out either in the conventional money market or in the Islamic money market.

The Islamic money market serves as an important tool to manage and regulate liquidity, particularly the *Al-Mudharabah* inter-bank investments (MII).[32] The MII injects or absorbs liquidity into or from the market. The financial tools used by the Bank Negara in managing liquidity in the Islamic money market will be described in chapter four.

In terms of settlement procedures, money transactions during the tendering process or transactions in the open market operations are settled in the counter party's accounts with Bank Negara, and this is conducted through the Real Time Electronic Transfer of

---

[32] The *Al-Mudarabah* Inter-bank Investment (MII) enable SPTF of banks, (defined to include Bank Islam Malaysia), to obtain funds from another SPTF of bank on a *Mudarabah* (profit-sharing) basis. The period of investment is from overnight to 12 months. The minimum amount of investment for the MII is RM50,000. The rate of return is based on the rate of gross profit before distribution for investments of one year of the receiving bank, while the profit-sharing ratio is negotiable. When a SPTF of bank obtains investment from another SPTF of bank for any period, the principal invested is repaid at the end of the period, together with a share of the profit arising from the use of the fund by the receiving bank.

Funds and Securities System. The Real Time Electronic Transfer of Funds and Securities System consists of two sub-systems, namely the Scripless Securities Trading System and the Inter-bank Fund Transfer System. Transactions in securities, which are conducted through the Scripless Securities Trading System, can only be finalised when both securities and funds are available, based on the delivery versus payment system. In the case of money market transactions involving direct borrowing/lending, which are conducted through the Inter-bank Fund Transfer System, the settlement will be processed based on the real time gross settlement system (RTGS).

The scope for an active open market operation has been constrained by the limited availability of government papers (government securities, Treasury bills and Government Investment Issues); government papers are thinly traded as they have generally been held mainly by the captive market to meet statutory investment requirements. At the same time, there has been a diminishing supply of the papers, reflecting the improved financial position of the government since 1993 and the downsizing of its operations. The narrow scope for an active open market operation via the government papers is reflected in its low holdings of the papers, which amounted to only RM108 million at end-August 1999.[33]

With the limited supply of papers, the role of open market operations has largely been to provide a discount window facility to the banking institutions as a last resort in times of liquidity needs. Nevertheless, there has been a more active open market operation in Government Investment Issues in order to fine-tune the Islamic money market liquidity position.

In addition to the government papers, other papers that are eligible for rediscounting at the window facility include Cagamas notes/bonds,[34] Bank Negara Bills (BNBs) and selected private debt securities. In the period 1992-1995, as a measure to overcome the problem of inadequate supply of government papers, Bank Negara issued its own papers (BNBs) to conduct open market operations as a means of mopping up the excess

---

[33] Central Bank of Malaysia, *Monthly Statistical Bulletin*, 2000, p. 24.

[34] Cagamas *Mudharabah* Bonds were introduced in 1 March 1994. Cagamas *Mudharabah* Bonds involved with the purchase of Islamic housing debts by Cagamas from institutions that provide Islamic housing finance to their clients and staff. The issuance of bonds are based on *Al-Mudharabah* concept by Cagamas for finance these purchases. The purchase of housing debt on Islamic principles by Cagamas is managed based on the Bai' Al-Dayn concept whereas the issued of Cagamas *Mudharabah* bonds is based on the *Al-Mudharabah* concept. Under this concept the bondholder and Cagamas will share profits according to ratios agreed earlier together. The agreements pertaining to the purchase of housing debt based on Islamic principles will be sealed between Cagamas Berhad and Bank Islam Malaysia Berhad. Cagamas will purchase housing debts amounting RM30 billion from Bank Islam. As a result of this agreement, a total of RM30 billion of Cagamas *Mudharabah* Bonds is created. Government has distributed RM30 billion worth of bonds to financial institution that offer Islamic banking (for pricing of Cagamas *Mudharabah* Bonds).

liquidity prevailing at that time. To overcome the problem of an inadequate supply of government papers for an active open market operation, Bank Negara has stepped up its efforts further to develop and deepen both the Government and the private securities market. Bank Negara has the option of conducting open market operations either through direct transactions or through repurchase agreements. As in the case of direct lending/borrowing, Bank Negara only deals with the principal dealers.[35]

The issue here is in order to increase bank deposits, Bank Negara may intervene in the money market by increasing the inter-bank offer rate (Kuala Lumpur Inter-Bank Offered Rate). At higher base landing rate, banks may be expected, ceteris paribus, can make more deposits from clients as the rate of return can be expected to increase. At higher interest rates or profit shares, the deposits in conventional and Islamic banks are expected to rise. At the higher interest rate and profit shares, customers would prefer to deposits their money because the rates of return are higher.

3.10.2 The statutory reserve requirement (SRR)

The statutory reserve requirement (SRR)[36] is one of the oldest monetary instruments available to Bank Negara to control the liquidity situation in the banking system. Under Section 37(1) of the Central Bank of Malaysia Act, 1958, banking institutions are required to maintain a certain percentage of their reserves with Bank Negara in the form of cash reserves. The SRR is a monetary policy instrument available to Bank Negara for the purposes of liquidity management. It also serves as an instrument to deal with fundamental changes as demonstrated in the aftermath of the regional financial crisis.

In recent years, the role of the SRR as a monetary instrument has had less prominence among central bankers, especially in developed countries. In Malaysia, however, it continues to remain one of the more potent tools for monetary management. The SRR is a potent instrument available to Bank Negara because it affects the level of deposits and loans that a bank can legally support given the size of its reserves. A higher ratio would, therefore, reduce the level of excess reserves available to the banking institutions, thereby leading to the contraction of loans and deposits.

---

[35] From www.emeap.org:8084?Redbook?M1/A2.htm/, *Management of Liquidity by the Central Bank*. (7th October, 2003)

[36] Reserve requirements oblige banks to hold a specified part of their portfolios in reserve at Bank Negara. Bank Negara lending facilities are typically short term; in general, they involve the rediscounting of high quality financial assets. Using indirect instruments, Bank Negara can determine the supply of reserve money. Strictly speaking, Bank Negara can determine the supply of reserve money in the long run only under a fully flexible exchange rate regime. Even under a pegged or managed exchange rate regime, however, Bank Negara transactions affect reserve money, at least in the short run.

Conversely, a lower ratio will increase the lending ability and deposits of the banking institutions. Such reserves do not earn interest, and the costs are usually passed on to the customers through higher lending rates.

As far as an Islamic bank is concerned, it is required to maintain a prescribed percentage of its reserves with Bank Negara, presently 4 per cent of its total eligible liabilities. As with the conventional banking institutions, such reserves do not earn income for the bank. For the Islamic windows the total eligible liabilities are consolidated with the total eligible liabilities of their respective banks as they (i.e., the Islamic windows) are not required to maintain a separate SRR for their Islamic banking services.

Usually, the main task of monetary policy is to control the amount of excess reserves in the banking sector. Excess reserves are simply the cash and balances that the bank holds with Bank Negara. In the conventional banking system, excess reserves are used to make loans, which include overdrafts, housing loans, personal loans, hire-purchase loans and corporate loans.

However, in Islamic banking, the excess reserves of Islamic banks and Islamic windows are used to make mark-up sales (*Al-Murabahah* and *Bai Bithaman Ajil*), which often make up the bulk of the banks' assets. In this respect, mark-up sales have replaced interest loans. Mark-up sales are in essence debt instruments, which strictly observe traditional conditions in making loans such as security or a collateral requirement and a payment through instalments.

During the period 1988-1999, there were several revisions of the SRR. Prior to 1998, the SRR was gradually revised upwards in several steps from 3.5 per cent to 13.5 per cent, prompted by the need to ensure that the underlying large excess liquidity was locked in with Bank Negara on a more permanent basis in order to contain inflationary expectations, as shown in Table 3.10.

However, in 1998, as part of the policy measures to stimulate economic activities in the aftermath of the regional financial crisis, the SRR was reduced in several steps from 13.5 per cent to 4.0 per cent by September 1998. Variation in the SRR ratio has been made only under specific circumstances where it became necessary either to mop up or inject large amounts of liquidity into the system when Bank Negara perceived that changes in the underlying liquidity conditions were massive and of a long-term nature.

Besides the variation in the SRR ratio, changes have also been made to the eligible liabilities (EL) base to widen the coverage of items to be included in it. In 1994, the EL bases of banking institutions were redefined to include all *Ringgit* inflows of funds from

abroad. This was intended to enhance the impact of changes in the SRR on the availability and cost of funds extended to the banks' customers.

The SRR continues to remain an effective monetary instrument in Malaysia. This may be attributed to several factors:

1. Disintermediation of funds away from the banking system is not pervasive, with total deposits placed with the banking system continuing to account for 87 per cent of deposits placed with the financial system. This is also evidenced in the large share of bank loans (82%) in the total financial system. To a great extent, this reflects the prudent approach used in liberalising the financial sector.
2. The SRR is imposed solely for monetary policy purposes and not for seignorage income to either the government or Bank Negara.

Table 3.10
Changes to statutory reserve requirement ratios and New Liquidity Framework

Dates of Revisions	Statutory Reserve Requirement Ratio (%)
1 January 1989	3.5
2 May 1989	4.5
16 October 1989	5.5
16 January 1990	6.5
16 August 1991	7.5
2 May 1992	8.5
3 January 1994	9.5
1 July 1994	11.5
1 February 1996	12.5
1 June 1996	13.5
16 February 1998	10.0
1 July 1998	8.0
1 September 1998	6.0
16 September 1998	4.0

Table 3.10 (continued)
Changes to statutory reserve requirement ratios and New Liquidity Framework[37]

Date	New Liquidity Framework					
	Commercial Banks		Finance Companies		Merchant Banks	
	Liquidity surplus < = 1 week	Liquidity surplus > = 1 week	Liquidity surplus < = 1 week	Liquidity surplus > = 1 week	Liquidity surplus < = 1 week	Liquidity surplus > = 1 week
January, 2000	(3%)	(5%)	(5%)	(7%)	(3%)	(5%)
January, 2001	(3%)	(5%)	(5%)	(7%)	(3%)	(5%)
January, 2002	(3%)	(5%)	(5%)	(7%)	(3%)	(5%)
January, 2003	(3%)	(5%)	(5%)	(7%)	(3%)	(5%)
January, 2004	(3%)	(5%)	(5%)	(7%)	(3%)	(5%)

Sources: Compiled by the author using data from the *Central Bank and the Financial System in Malaysia-A Decade of Change-1989-1999*, Central Bank of Malaysia, 1999, p.156
Compiled by the author from www.bnm.gov.my/index.php?ch=109&pg=294&mth=6&yr=2004, *Monthly Statistical Bulletin*, Bank Negara Malaysia.

Note: Beginning January 2001, all banking institutions have moved to the New Liquidity Framework.

[37] Under the New Liquidity Framework, the compliance requirement is set to equal a specified percentage of the banking institution's deposit base, and incorporate the requirement that, for example, a commercial bank must be able to withstand the withdrawal of up to 5% of its deposit base over a one week period.

A restrictive monetary policy stance can be pursued by Bank Negara through an increase in the ratio of the SRR. An increase in SRR may reduce the total deposits and the ability of banks to extent credit. Similarly an increase in SRR may not allow the Islamic banks to sell new goods and services based on *Al-Murabahah* and *Bai-Bithaman Ajil* contracts. There will be no deposits created in the banking system. Money creation will be reduced no matter what banking system is used.

3.10.3 Centralisation of deposits of the government and the Employees' Provident Fund with Bank Negara

The Money Market Operations (MMO) Account of the Accountant-General (AG) provides Bank Negara with an effective instrument for monetary management, not only to control liquidity at source but, more importantly, to ensure that government operations are consistent with the objectives of monetary policy. The MMO Account of the AG which was reactivated in April 1990 was one of the key measures taken during the period 1990-1996 to ensure that the government did not accumulate its deposits with the banking system unnecessarily, as that would negate the tight monetary policy stance adopted by Bank Negara during the period.

Under this arrangement, Bank Negara manages the Government's fund, consistent with the desired interest rate level and underlying excess liquidity conditions. During a tight liquidity situation, Bank Negara could recycle these deposits to the banking system. By the end of 1998, a total of RM95.3 billion was maintained in the AG's MMO Account with Bank Negara Malaysia.

A similar arrangement has also been in force with the Employees Provident Fund since October 1992. In line with a more market-oriented approach to monetary policy management, interest paid on both accounts are based on market rates.[38]

3.10.4 Guidelines on lending to the priority sectors and selective credit and administration measures

The imposition of guidelines on lending to the priority sectors and selective administrative measures are intended to target only specific sectors of the economy. In the case of the guidelines on lending to the priority sectors, this is necessary to ensure that the economic and social objectives are met, consistent with national objectives.

---

[38] Employees Provident Fund, *Total EPF Contribution Increase in 2003*, www.kwsp.gov.my/english/latestpress.html/. (13th October, 2003)

In the case of objective credit measures, such credit controls are imposed in order to influence the direction of lending activities to specific sectors without affecting the availability of funds in the system and the level of prevailing interest rates. As these guidelines would have a less desirable impact on the efficiency of distribution of resources in the economy in the longer run, such guidelines are introduced only under compelling circumstances and for limited periods. A case in point was the pre-emptive measures taken in 1997 to address the imbalanced allocation of resources being channelled to the property sector, consumption spending (credit cards, hire-purchase lending for motor vehicles) and the purchase of stocks and shares.

Recognising that the changes in interest rates would have a limited impact in terms of containing the rise in bank credit for purchases of properties and shares and hence, asset prices, selective measures were imposed to address specific concerns without affecting the overall liquidity and the interest rate level in the economy. The measures were implemented on a temporary basis to complement the other conventional measures being employed at the macro level to contain inflation. They were lifted once they had achieved the desired results.

Another occasion was the tightening of regulations regarding the hire-purchase of motor vehicles in 1991 to curb the purchase of motor vehicles, this being the single most important cause of rapid growth in consumption credit during that year. Following the measure the growth of hire-purchase loans slowed down to 7.6 per cent at end-1992 from a high of 8.5 per cent in May 1990. Consumption credit growth also declined sharply to 8.5 per cent at end-1992 from 55 per cent at end-July 1991.[39]

3.10.5 Moral suasion

Moral suasion has been used to complement the existing measures imposed on the banking institutions. The experience over several decades shows that moral suasion has on occasion been relied upon to influence the direction of activities of the banking industry.

3.11 MONETARY MANAGEMENT, 1988-1998

Economic and monetary management during the period 1988-1998 confronted many challenges, posed by a decade of rapid economic growth up to 1997, averaging 9.3 per

---

[39] From the *Central Bank and the Financial System in Malaysia: A Decade of Change 1989-1999*, Central Bank of Malaysia, 1999, pp. 158-159.

cent per annum, followed by a sharp contraction in 1998 by -7.5 per cent (see Table 3.6). At the same time, this period also witnessed volatile short-term speculative capital flows in 1992-1994 and again in 1997-1998 during the regional crisis.[40] The economic and financial problems that emerged during this period were not only caused by elements associated with aggregate demand but were also due to structural weaknesses or deficiencies. Thus, these economic and financial problems were addressed through comprehensive and co-ordinated monetary, fiscal, prudential and structural policies. Monetary policy was only one part of the overall economic and financial policy.

The objective of monetary policy has been to promote a sustainable economic growth in an environment of price stability. While price stability is the main objective of monetary policy, it should not be achieved at any cost. Price stability is a means to an end, the end being long-term sustainable growth. Monetary management also needs to be appropriately sequenced, and the timing of policy was important, particularly during the period of regional crisis. While several issues may need to be addressed, it is important that these policy responses are prioritised to minimise disruptions to the system. On the whole, monetary management during this decade of rapid change confronted several major issues. These included the two episodes of relatively higher prices (see Figure 3.4); the risk of asset price inflation; volatile capital flows; and the regional financial crisis of 1997-1998.

3.11.1 Monetary policy and inflation

Malaysia has been relatively successful in maintaining a low inflation environment with relatively high GDP growth. The country did experience periodic episodes of high monetary growth. These conditions, however, did not persist over an extended period. The initial inflationary shock came from non-monetary sources, that is, the steep price increases in 1973-1974 and 1980-1981, caused by sharp increases in global oil prices.[41] More recently, the 1988 episode of relatively high prices was caused by a sharp depreciation of currency.

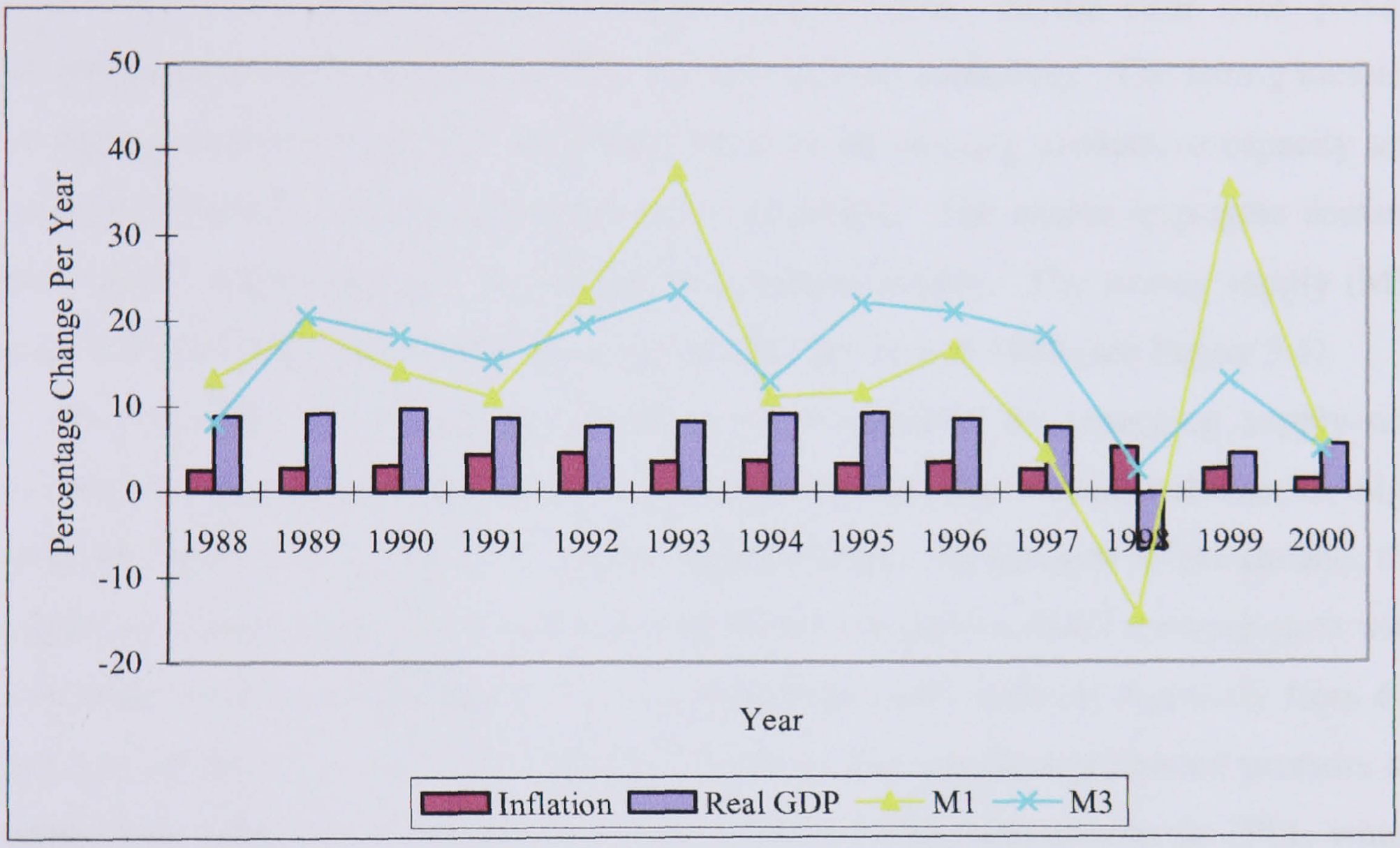
Figure 3.4 depicts the contemporaneous relationship between output growth, monetary growth and inflation. When monetary growth significantly exceeded real output growth over a protracted period, the effect has generally been felt in terms of rising prices. Early corrective action ensured a return to price stability.

---

[40] Asia Development Bank, *Country Assistance Plans–Malaysia*, www.adb.org/Documents/CAPs/Mal?0101.asp?p=ctrymal/. (13th October, 2003)
[41] Central Bank of Malaysia, *Monthly Statistical Bulletin*, 1975, pp. 25-27.

In the last decade, there were two episodes of relatively high inflation in Malaysia. The first period was 1991-1992 and the second was in 1988 (Figure 3.4). The circumstances surrounding the two periods of relatively higher price increases differed significantly and thus required different policy responses. Nevertheless, in both cases, the measures taken proved to be effective in moderating inflation to low levels within a brief period of time.

Figure 3.4
Output, prices and monetary growth



Source: Compiled by the author using data from the *Monthly Statistical Bulletin*, Central Bank of Malaysia, 2001.

(a) High inflation in 1991-1992

In the first episode of relatively high price increase, the annual growth rate of the consumer price index (CPI) reached a high of 4.4 per cent in 1991, and 4.7 per cent in 1992. The price increases were caused by a combination of factors, namely, the increase in aggregate demand, high monetary growth, supply-side constraints and external developments.

In the period preceding 1991, rapid economic growth was experienced, leading to fears that the economy may expand at above its potential output level, the potential output level being defined as the maximum level of output that is attainable without exerting pressure on resources or prices. A study by Bank Negara showed that the economy grew, on average, at a rate lower than that of potential output growth over the period 1970-1987, but that this changed during the period 1988-1997, when actual

output growth outpaced potential output growth. The narrowing of the output gap was reflected in the tight labour market with labour shortages in selected sectors of the economy, as well as in a rapid increase in imports.

Inflationary pressures were fuelled initially by rising aggregate demand, which essentially reflected a "pent-up" demand following the economic recovery. Consequently, private consumption increased significantly, by 12.3 per cent per annum in 1988-1990. Growth of consumption credit surged to over 70 per cent per year in 1989 and 1990, before slowing down to 35 per cent in 1991. At the same time, private investment was actively stimulated by the generous tax incentives. The strong increase in aggregate demand exerted substantial pressure on existing productive capacity and resources, thereby causing upward pressure on prices. The excess aggregate demand was further aggravated by a rapidly growing money supply. The money supply (M3) rose at double-digit rates, reaching a high of 20.6 per cent in 1989 (see Figure 3.4).

By 1992 the inflationary pressures were exacerbated by emerging supply-side constraints, primarily in the form of infrastructure and distribution bottlenecks, high rates of capacity utilisation and a tight labour market. At the turn of the decade, the supply of labour, particularly skilled and technical manpower, could not keep pace with the surge in private investment. The unemployment rate declined markedly from 6.9 per cent in 1985 to a low of 4.3 per cent in 1991. The consequent upward pressure on wages was reflected in the private sector collective wage agreements in 1991, which provided for a weighted average increase in wages of 11.7 per cent, considerably higher than the 7.9 per cent in 1990.[42]

The inflationary pressures in the domestic economy were also partly due to the increase in bank liquidity from capital inflows in 1990-1992. Nevertheless, inflation in the international environment itself was relatively benign during this period, with most of Malaysia's major trading partners recording low rates of inflation. This, coupled with the appreciation of the Malaysian *Ringgit*, effectively led to lower imported inflation from abroad. Thus, external factors during 1991-1992 worked towards moderating the increase in prices during this period.

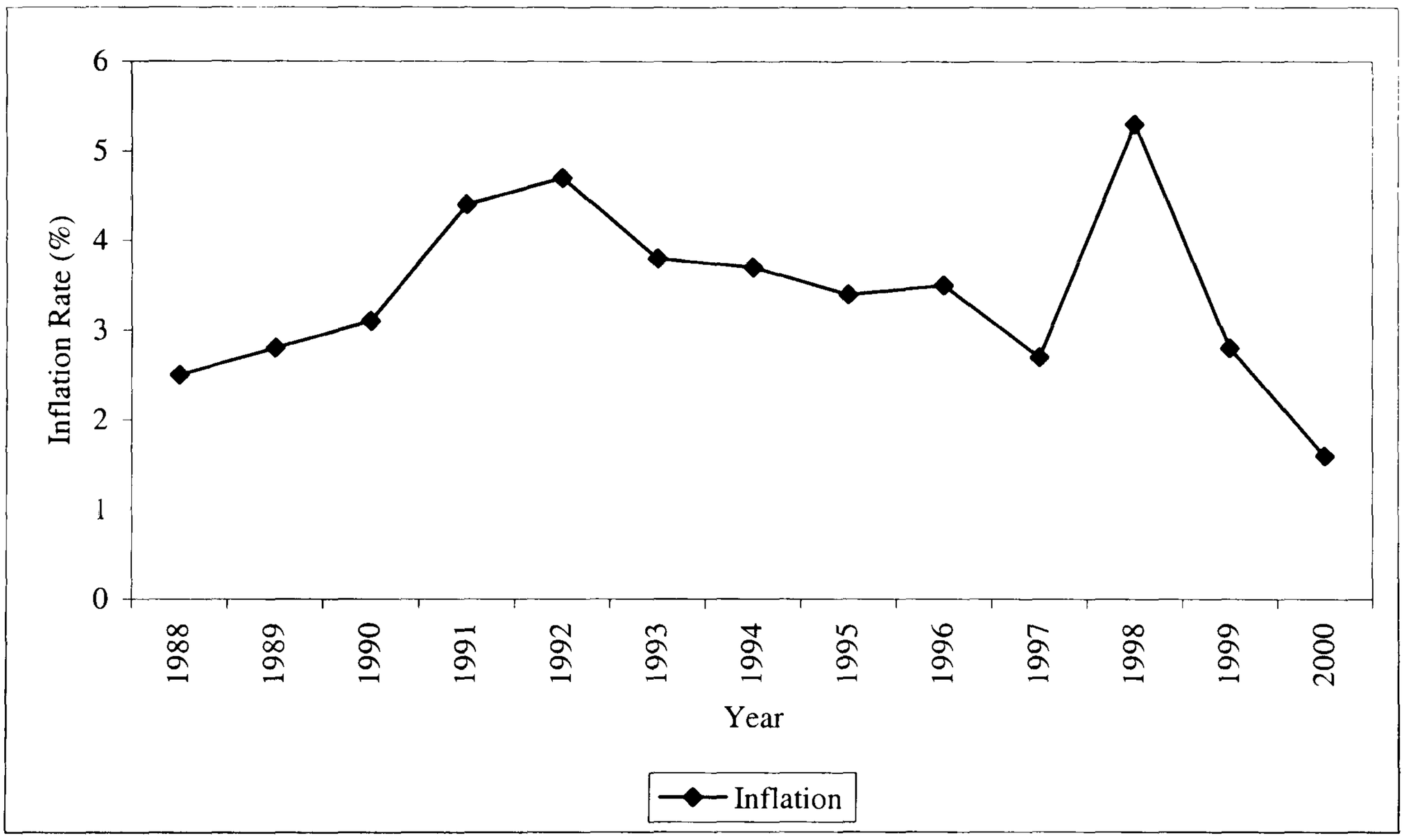
Given that the sources of price pressures were both demand-related and supply-related, a comprehensive package of anti-inflationary policies was implemented. These included progressive monetary tightening and continued fiscal consolidation. These demand management policies were also reinforced by other policy initiatives to deal with the supply shortages and inefficiencies.

---

[42] Ibid., pp. 162-163.

As early as 1989, inflationary pressures emerged due to signs of excessive demand in the economy. Monetary policy then shifted towards a tighter stance. The statutory reserve requirement was revised upwards four times during the period 1989-1991. This was further reinforced by the absorption of liquidity through direct borrowings from the market. As the operations of the Federal Government and the Employees Provident Fund (EPF) tended to have a significant impact on liquidity in the banking system, their surplus funds were centralised with Bank Negara. This provided Bank Negara with greater control over the timing and magnitude of the injections and withdrawals of liquidity from these sources. Consequently, M3 growth was reduced from 18.2 per cent in 1990 to 15.3 per cent in 1991, more in line with the growth in real sector activity.

Figure 3.5
Two episodes of relatively high inflation



Source: Compiled by the author using data from the *Monthly Statistical Bulletin*, Central Bank of Malaysia, 2001, p. 100.

However, it was also noted that increased consumption occurred in specific sectors, namely cars and consumer durables. Hence, the tight monetary policy was complemented with measures at the micro-level to address the problem. Direct limits were placed on hire-purchase loans for the purchase of passenger cars by reducing the margins on financing and shortening the repayment period. In 1992, the Bank Negara also introduced guidelines for credit card operators, with minimum requirements for income, eligible age and size of initial settlement.

As the higher prices were also caused by the supply-side constraints, monetary measures were insufficient to contain price rises. Fiscal and supply-side measures were also implemented. The government continued to exercise fiscal restraint to ensure that public sector spending did not become a source of inflation. In addition, public sector spending focused on selected priority programmes, such as infrastructural construction to alleviate infrastructure bottlenecks. Regulations were also put in place which allowed foreign workers to meet the labour shortages, particularly in the plantation and construction sectors. In addition, administrative measures were also implemented. With the intensification of efforts on all fronts to contain inflationary pressures, the rate of inflation moderated to 3.4 per cent in 1995, from 4.7 per cent in 1992, as shown in Figure 3.5.

(b) High inflation in 1998

The second episode of relatively high prices, in 1998, was significantly different from the early 1990 episode. The annual growth rate of the consumer price index during this period was 5.3 per cent (see Figure 3.4 or 3.5). Unlike the 1991-1992 period, when high prices coincided with strong GNP growth, 1998 saw high prices in a constrained economy with substantial excess capacity. As a result of the Asian financial crisis, consumption and investment demands fell to new lows. Private consumption declined by 10.8 per cent in real terms in 1998, while private investment fell by 54.8 per cent. The unemployment rate also increased from 2.5 per cent in 1996 to 3.9 per cent in 1998 (see Table 2.5). During this period, the main cause of price increases was not domestic factors, but instead, the excessive depreciation of the *Ringgit* exchange rate.

The *Ringgit* depreciated by about 35 per cent against the United States dollar in 1997 and by another 7.9 per cent by August 1998, causing domestic prices to increase. Nevertheless, the full impact of the depreciation was not passed through to the consumers as firms absorbed part of the increase in order to maintain their market share in an environment of weak domestic demand and excess capacity. As the financial crisis became more prolonged, the subsequent deterioration in investor and consumer demand, as well as a weak export demand, led to a sharp contraction in domestic economic activities. Consequently, inflationary pressures abated in the latter part of 1998, mainly reflecting the slack in the product and labour markets.[43]

---

[43] Central Bank of Malaysia, *Annual Reports*, 1999, pp. 102-103.

The different circumstances surrounding the episode of higher prices in 1998 called for a different set of policy measures. The task of monetary policy during this period became more challenging due to the combination of international and domestic developments. The initial step towards stabilising price expectations was to address the depreciation exchange rate and to contain the high growth of credit. Monetary policy was tightened and interest rates were allowed to edge upwards. Following the sharp depreciation of the Indonesian Rupiah, the *Ringgit* weakened to a historical intra-day low of USD1 = RM4.48 on 7 January 1998.

Interest rates were raised further in view of the depreciation in the inflationary outlook so as to ensure that savers earned a positive rate of return. The 3-month Bank Negara intervention rate was raised to 11 per cent in February 1998. Bank Negara was, however, mindful of the adverse impact of higher interest rates on the economy and the lack of reliability of interest rates as an instrument to stabilise the volatile behaviour of exchange rates. Interest rate policy was, therefore, carefully balanced between the need to maintain price stability and the need not to cause an over- adjustment in the economy. While there was intense pressure for the rates to be increased, Bank Negara did not raise the rates to the extent suggested by the market and the International Monetary Fund (IMF).

The inflationary pressures began to moderate after July 1998. As the *Ringgit* exchange rate stabilised and inflationary pressures moderated, monetary policy was eased in early August 1998 to promote economic recovery. The 3-month Bank Negara intervention rate was reduced in three stages from 11 per cent to 9.5 per cent in August 1998. Following the imposition of selective exchange control measures on 1 September 1998 and the fixing of the exchange rate at RM3.80 to the United States dollar on 2 September, monetary policy had greater flexibility to respond to the evolving domestic conditions.

The fixed exchange rate regime accorded businesses a greater amount of certainty while at the same time contributing to the holding back (reining in) of inflationary expectations. The moderation in the inflationary outlook and the stability in the foreign exchange market allowed Bank Negara to ease monetary policy further to strengthen economic recovery. The 3-month intervention rate was reduced to 8 per cent on 3 September 1998 and was subsequently reduced further in stages to 5.5 per cent in August 1999. The SRR was also reduced in stages from 13.5 per cent in February 1998 to its current level of 4 per cent.

In managing price stability, Bank Negara is aware that monetary policy affects the economy with long and variable lags. For this reason, Bank Negara monitors a wide range of economic indicators. By responding pre-emptively, inflationary conditions have been contained.

It is important to note, however, that shifts in monetary policy also affect investment and consumption. In a situation where inflation is caused by excess demand in the economy, a contractionary monetary policy is called for. The higher interest rates that result from a tightening of monetary policy can be expected to result in a reduction in interest-sensitive expenditure for both households and businesses.[44] In particular, residential construction and investment in capital equipment are sensitive to interest rate changes as they are financed largely by borrowings.

Expectations also play a major role in the effectiveness of monetary policy. If the monetary authorities are seen as effective in containing inflation, the period of adjustment in the economy can be expected to be shorter.

However, in 2000, the management of monetary policy was focused mainly on managing liquidity flows to ensure stable liquidity conditions in the banking system so as to maintain interest rates at levels low enough to promote economic activity but sufficiently high to ensure a positive real rate of return to depositors. In addition, during January-April 2000 liquidity operations by Bank Negara were largely contractionary, in order to sterilise net inflows from the large trade external sector arising mainly from the large trade surplus and portfolio inflows.[45]

3.12 ASSET PRICES AND MONETARY POLICY

Bank Negara has traditionally focused on consumer prices, as measured by the consumer price index (CPI) or some derivative of it, as the appropriate measure of inflation for the conduct of monetary policy. However, there has been a growing recognition that this may be too narrow a definition. In particular, there has been growing concern about the impact of asset price inflation, not just on the overall inflation rate, but also on real economic activity and the health of the banking system.[46]

Malaysia went through an asset market boom and bust in the early 1980s. The impact of the developments in the asset market was felt not only by speculators but also

---

[44] Asia Development Bank, *Country Assistance Plans–Malaysia–ADB.org, 2003,* www.adb.org?Documents?CAPs/MAL/0101.asp?p=ctrymal/. (17th October, 2003)
[45] Central Bank of Malaysia, *Annual Reports*, Monetary Policy and Fiscal Developments, 2000, p. 3.
[46] Central Bank of Malaysia, *Annual Reports*, Monetary Policy and Fiscal Development, 1999, p. 1.

by the rest of the economy. The resulting loss of consumer confidence exacerbated the impact of the recession of the mid-1980s. Of special concern was the threat to the stability of the banking system posed by the increased number of bad/dishonoured loans. Many of these loans had been extended to the property sector and for the purchase of stocks and shares. These loans were collateralised with properties and stocks and shares valued at over-inflated prices.

Based on the experiences in restoring the banking industry to health in the 1980s, and the financial cost of doing so, increased importance has been accorded to developments in the asset markets, and particularly to the banking system's exposure to the asset markets. The risks to the banking system from asset bubbles are even higher in Malaysia than in other countries, given that the banking sector is the main source of financing for the economy (the average loan/GNP ratio in the 1990-1998 period was 113.3 per cent).

In the past decade, there have been a number of periods of inflation in the asset markets. During the period 1994-96, residential property prices in the major towns increased by about 20-25 per cent, compared with only 4.5-6.4 per cent during the period from 1992 to 1993. In the stock market, the Second Board Index showed signs of excessively high growth in 1996, with an annual average growth rate of 92 per cent. Asset price inflation was fuelled by excessive demand brought about by expectations of high increases in prices. This high demand was accompanied by a strong expansion in credit. During 1994-1996, the average growth of credit, and, consequently of the money supply, was significantly higher than the growth in real sector activity.

Priority was therefore given to preventing excessive speculation in the asset markets from destabilising the economy. However, it was recognised that traditional monetary instruments would have limited effectiveness in containing credit-driven asset price inflation. Raising interest rates or contracting liquidity to counter price pressures in the asset markets could also be counter-productive, as it would result in an over-adjustment in the real economy without having a significant effect on speculative activity.

This is particularly the case when price and profit expectations remain high. Speculative activity is driven by expectations of high returns and is therefore unlikely to be affected by the increase in borrowing costs. Higher interest rates would instead adversely affect the low-risk business borrowers. The end-result of adopting a high interest rate policy could well be to drive credit into those types of activities that need to be discounted. This problem of adverse risk selection would then leave the banks with a riskier pool of borrowers and increase the potential for bad loans.

In an open economy like Malaysia, the use of interest rates as a policy tool is limited by another consideration. If domestic interest rates are pushed too far above international rates, it could lead to significant short-term capital inflows – providing not only the liquidity to fuel inflation in the asset markets but also generating volatility in the exchange rate.

For this reason, broad-based policy tools operating through the level of interest rates may not be appropriate for dealing with specific problems. Consequently, rather than relying only on interest rates, specific pre-emptive measures designed to avoid a recurrence of the 1980s asset price inflation were implemented in order to limit the amount of credit extended to finance speculation in the asset markets.

In October 1995, tighter conditions were imposed on loans for the purchase of selected non-owner occupied properties (namely residential houses, apartments and shop houses). These were reinforced by the fiscal measures introduced in the 1996 Budget, which reviewed upwards the graduated property gains tax to a range of 15-30 per cent for residents, while levying a flat tax rate of 30 per cent on non-residents, and limiting the purchase of houses by foreigners to those exceeding RM250,000 per unit, as well as the imposition of a levy of RM100,000 on the purchase of real estate by foreigners.

While these early measures succeeded in containing property prices, stock prices reached new heights in early 1997. Bank credit for the purchase of property and shares during this period continued to rise. Concerned about the potential for the formation of an asset bubble and the adverse impact on banking industry soundness should a correction in asset prices take place, Bank Negara announced, in April 1997, a further pre-emptive measure to reduce bank lending to the asset markets. Credit controls were introduced to limit the proportion of total loans to be extended for the purchase of stocks and shares, and investment in the broad property sector, excluding loans for residential properties costing RM150,000 and below, infrastructure projects, public utilities and amenities, and industrial buildings and factories.

Bank Negara also increased the flow of information to the public on a wide range of construction indicators, including the supply of commercial space, occupancy rates, and the price of properties, in order to bring about a better balance of supply and demand in the property market. In its publications, and through speeches by senior Bank officials, Bank Negara also attempted to provide a detailed analysis of construction data so that the private sector could make informed decisions about new projects dealing with property purchases.

These measures had the effect of slowing down the stock and property price increases after the end of 1996. Following the imposition of the credit ceilings in 1997, further increases in lending for financing purchases of property and shares also moderated, thereby providing banking institutions with greater margins to withstand the subsequent declines in stock prices that followed the sharp *Ringgit* depreciation towards the end of the year. The information on the potential over-supply situation, together with the limits on credit, resulted in the scaling down of some projects and the postponement of others.

The emergence of the regional crisis in mid-1997 had a deflationary impact on the asset markets. Stock prices started their downward trend and by the end of 1997, the KLSE Commodity Index had fallen by 45 per cent from the level at the end of April 1997, while the price-earnings ratio (P/E ratio) declined to 11.28 at the end of 1997 compared to 22.91 at the end of April. The increase in house prices also subsequently moderated to 1.9 per cent in 1997 from 12.9 per cent for 1996.[47]

On the basis of past and recent evidence, it is clear that Bank Negara cannot ignore developments in the asset markets. Although the relationship between the escalation in prices in the asset markets and inflation in the overall economy is not close, the adverse impact of a sudden and large price decline in these markets would destabilise the banking system and the economy. This experience has been demonstrated in Malaysia and many other countries.

3.13 CAPITAL FLOWS AND MONETARY POLICY

The benefit to Malaysia of maintaining flexible exchange rates is normally assumed to be that in the presence of an open capital account, this provides the country with some degree of monetary independence, since the exchange rate can move to bring into equilibrium disparities between inflows and outflows. Therefore, monetary policy can influence interest rates in such a way as to achieve the domestic policy objectives of maintaining low rates of inflation. However, this assertion is based on some premises that do not often hold for countries like Malaysia.

If the equilibrium in the balance of payments is caused by economic fundamentals, as when the current account has a large deficit due to excessive reliance on imports, then a shift in the exchange rate by changing the relative prices of domestic and foreign goods can beneficially correct the imbalance; however, this becomes irrelevant when

---

[47] Central Bank of Malaysia, *Annual Reports*, Monetary Policy in 1998, pp. 1-2.

the changes in the exchange rate are caused by short-term capital flows. It is also debatable whether allowing the exchange rate to move in response to volatile short-term capital flow is the optimal policy for a trade-dependent country like Malaysia.

The degree to which different countries can tolerate wide swings in their exchange rate must depend on the relative openness of their economies. The more open the economy, the greater would be the adverse economic consequence of any sustained volatility in the exchange rate. Conversely, a less open economy will probably have a higher threshold of tolerance for such volatility. Therefore, discussions of the appropriate policy response to these capital flows cannot ignore differences in the structure and relative openness of different economies.

Countries like Hong Kong and Singapore make the maintenance of exchange rate stability the primary focus of their monetary policy because of the crucial role external prices play in determining their economic welfare. Similarly, it is unrealistic to expect Malaysia, with trade accounting for 161 per cent of GDP in 1997, as shown in Table 3.11, to allow its exchange rate to move erratically in response to capital flows. Comparisons with countries like Argentina and Chile frequently do not place enough emphasis on the point that these countries are far less open than a country such as Malaysia.

Prior to fixing the *Ringgit* exchange rate against the United States dollar on 2 September 1998, the exchange rate was free to fluctuate, with Bank Negara intervening to minimise volatility but not to affect the fundamental trend. This policy had served Malaysia well for more than two decades and the *Ringgit* enjoyed relative stability. This changed in the early 1990s as short-term flows gained significance in the global financial markets and in Malaysia in particular.

In the 1990s, with large foreign capital movements occurring within a relatively short period of time, managing monetary policy became increasingly complex and difficult. Malaysia, being one of the most open economies in the world – not only to trade flows (see Table 3.11) but also to capital flows – is vulnerable to external shocks.

Without deep financial markets, the management of domestic interest rates can become especially complicated when there are volatile short-term capital flows. The limitation this imposes on monetary policy was highlighted in the two incidences during the 1990s. During the 1992-1993 period, Bank Negara increased the interest rate to curb rising inflation. However, the higher interest rates together with buoyant activities in the local stock market and expectations of further appreciation of the *Ringgit* attracted a surge in the short-term capital inflows in 1992-1993, inundating the banking

system with liquidity and causing interest rates to fall sharply. The reverse happened during the recent Asian financial crisis.

Table 3.11
The relative openness of the Malaysian economy, 1997-2002

Country	Total Trade to GDP Ratio (%)						
	1997	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**
Singapore	267	258	265	274	280	278	279
Malaysia	161	182	179	181	184	182	183
Thailand	78	87	98	105	110	106	109
Philippines	77	94	96	92	90	92	102
Canada	66	69	68	69	70	67	69
Korea	64	71	69	70	68	66	67
Chile	47	50	52	54	55	55	53
United Kingdom	46	42	40	41	42	40	42
Indonesia	44	80	76	72	70	51	58
China (Mainland)	35	34	40	48	53	52	55
Mexico	34	59	54	52	53	52	50
Australia	32	32	34	32	35	34	32
United States	20	19	19	18	18	18	19
Japan	18	17	18	18	18	19	19
Argentina	17	19	20	22	18	34	36

Sources: Compiled by the author using date from the *Central Bank and the Financial System in Malaysia-A Decade of Change, 1989-1999*, Central Bank of Malaysia, 1999, p. 171.
Compiled by the author using data from the *International Financial Statistics*, March 2004, International Monetary Fund, Washington D.C., USA.
Compiled by the author from www.worldbank.org/data/countrydata/countrydata.html in *The World Bank Group, Data Profile*, 2004.

The economy entered a recession in 1998, but interest rates could not be lowered to the extent desired due to concerns over the potential outflows of funds and resulting exchange rate instability. In both instances, short-term capital flows had complicated monetary management by limiting the ability of Bank Negara to move interest rates to the extent it wanted.[48]

3.14 MONETARY POLICY DURING THE FINANCIAL CRISIS

The most challenging period for monetary policy came towards the end of the decade, following the outbreak of the regional financial crisis in mid-1997. This period saw extreme volatility in the financial markets. The crisis had severe and wide-ranging effects on financial and economic activities. Although the banking system was in a strong position at the beginning of the crisis, structural weaknesses in the system emerged as the crisis worsened. The strong initial conditions and the swift response and pragmatic measures introduced allowed Malaysia to avoid the extreme effects of the

[48] From the *Central Bank and the Financial System in Malaysia-A Decade of Change, 1989-1999*, Central Bank of Malaysia, 1999, pp. 170-172.

crisis. A priority of policy throughout the crisis period was to ensure that the payments system and the intermediation function continued to operate efficiently and without interruption.[49]

During the period preceding the crisis, Malaysia had a decade of strong growth. This was accompanied by strong fundamentals, such as a high national savings rate, full employment, a fiscal surplus for several years, and a relatively low level of external debt. In addition, an important contributory factor to Malaysia's resilience was the existence of a strong financial system following the extensive restructuring which took place after the 1985 recession. The banking system was well capitalised with an average risk-weighted capital ratio of 10.5 per cent. In addition, there was low foreign exchange exposure and a low level of non-performing loans. The banking system was also governed by a strong prudential framework.[50]

Notwithstanding these strong fundamentals, Malaysia was affected by the contagious effects of the crisis. The openness of the economy and the high dependence on trade accentuated the adverse impact of the volatility in exchange rate on all sectors of the economy. Weaknesses within the financial system also emerged, especially with respect to the high credit growth and the large proportion of loans provided for financing the asset markets and related activities. The negative impact of the crisis on the banking system and the corporate sector increased as the nation experienced several waves of currency attacks during the crisis period.[51]

During the first half of the 1990s, the easy availability of liquidity combined with a low interest rate had led to a high credit growth, which was viewed with concern given the strong potential link between lending booms and financial crisis. Rapid growth in the credit ratio of bank credit to GNP had preceded financial problems in Argentina (1981), Chile (1981-1982), Colombia (1982), Uruguay (1982), Norway (1987), Finland (1991-1992), Japan (1992-1993), and Sweden (1991). Even in Malaysia's own experience, both the banking crises of 1985-1986 and 1997-1998 were preceded by sharp increases in credit growth. The reason for this link is that rapidly rising levels of bank loans are usually also associated with weak credit evaluations, excessive lending to risky sectors and less prudent lending practices.

---

[49] Government of Malaysia, *White Paper Status of the Malaysian Economy*, National Printing Department, Kuala Lumpur: Malaysia, 1999, p. 23.
[50] Economic Planning Unit, *White Paper on the Status of the Financial Crisis–Part II*, www.epu.jpm.my/Bi/public/White_paper.html#part2/. (13th October, 2003)
[51] Ibid., from *White Paper on the Status of Issues Arising from the Crisis–Part III*, 1999, www.epu.jpm.my/Bi/public/White/White_paper.html#part2/. (13th October, 2003)

This would make the banking system more vulnerable to exogenous shocks. Nevertheless, it is very important to distinguish between the level of lending and the rates of increase. A high ratio of bank loans to output is not by itself a source of concern as it may indicate financial deepening. Although a high level of loans to output ratio would make the banking system more prone to economic upheaval, this may not necessarily lead to a banking crisis if the banks are prudent in their lending policies and maintain strong balance sheets. However, it becomes a matter of concern when there is a rapid increase in loans within a short period of time, since this usually leads to poorer average loan quality.

For the period 1995-1996, there was a significant increase in lending caused by excess liquidity and exuberant asset markets. The two-tier regulatory system, which was meant to promote the emergence of core banks that are well managed and capitalised, had also unintentionally contributed towards the aggressive and imprudent lending activities. The subsequent contagion-induced sharp fall in stock prices, combined with tight liquidity and higher interest rates, weakened the quality of assets on the banks' balance sheets. The banking system, on the whole, however, remained relatively sound and resilient amidst the crisis. Nevertheless, the stresses arising from the outflow of short-term funds and inefficiencies in the intermediation process led to market distortions.

The finance companies as an industry were fragmented, with many small players, and consequently became a potential source of vulnerability with regard to the health of the overall banking system. The competition for funds by the affected institutions contributed to the sharp increase in lending rates for the industry as a whole. Lending rates during this period rose to exceed 20 per cent. These higher interest rates in turn weakened the banks' balance sheets by increasing the level of their non-performing loans.[52]

3.15 MONETARY POLICY RESPONSE TO THE CRISIS

The policy response to the crisis evolved along with the different stages of the financial crisis as circumstances changed. During the period of volatility and turmoil in the regional financial markets, the focus of policy was to attain macroeconomic and financial stability. This was represented by measures to reduce the current account deficit, contain inflationary pressures arising from the depreciation of the *Ringgit* and a

---

[52] Ibid., pp. 26-27.

stabilisation package introduced by Bank Negara in March. Subsequently, when the crisis became more prolonged, and the country was faced with a severe economic contraction from mid-1998, recovery measures were put in place. During this phase, a fiscal stimulus programme was implemented to revive the economy. This was supported by an accommodative monetary policy.[53]

When the contagion first affected Malaysia in July 1997, Bank Negara initially intervened in the foreign exchange market. This resulted in a tightening of liquidity and sharply higher interest rates in the inter-bank market. However, two weeks into the crisis, it was recognised that it would be fundamental and prolonged. Bank Negara injected liquidity back into the banking system and reduced interest rates to pre-crisis levels so as to prevent the events from damaging the real sector of the economy.

However, as the crisis became prolonged, the sharp depreciation of the *Ringgit* and the continued high credit growth brought concerns about higher inflation to the forefront. If inflation was allowed to increase, it would not only reduce the welfare of the majority of Malaysians, it would also offset to some extent the benefits to the export sector from the *Ringgit* depreciation. Consequently, interest rates were adjusted upwards to account for the higher expected rate of inflation and to ensure a positive rate of return on savings. However, the increase in interest rates was significantly lower than prescribed by the IMF. To moderate the need to increase interest rates substantially, a graduated credit plan scheme was put in place.

At the beginning of 1998, there was a sharp increase in the volatility of both the foreign exchange and the stock markets. Inflationary pressures also began to surface in response to the sharp depreciation of the *Ringgit*. There was also a progressive tightening of liquidity in the banking system in response to the withdrawal of foreign short-term funds as well as the strong demand for loans. The measures adopted focused on improving the liquidity distribution in the banking system, thus stabilising conditions in the domestic economy. During this period, interest rates were adjusted upwards to contain inflationary pressures as well as to discourage capital outflows.

As the crisis became prolonged, strains on the economy and the resultant asset price deflation exerted pressures on the banking system. Although a total of RM34 billion was extended by Bank Negara to banking institutions, certain banking institutions experienced severe tight liquidity. As a result of the segmentation in the money market, smaller financial institutions faced difficulties in obtaining funds, thereby pushing interest rates, and consequently lending rates, higher. Lending rates based on cost plus

---

[53] Ibid., p. 1.

exceeded 20 per cent in early 1998. Banking institutions, concerned with the deterioration of their balance sheets, also became overly cautious in their lending activities and tended to focus on loan recovery rather than on lending.

As a result, loans extended by the banking system contracted significantly. Loan growth slowed down from a high of 28.2 per cent as at end-June 1997 to 23.4 per cent at end-January 1998. In February, loans extended by the banking system began to record a net repayment position, with a monthly decline of RM4.4 billion. At the end of April, loan growth was 14.7 per cent, lower than the credit plan-based loan growth of 15 per cent for end-1998.

In response, the SRR was reduced from 13.5 per cent to 10 per cent in February and again to 8 per cent on 1 July. The reductions in the SRR were aimed at reducing the cost of funds to banking institutions and at improving the distribution of liquidity among individual banking institutions, thereby enhancing the lending capacity of banking institutions. As a result of the improved liquidity distribution, the money market rates declined and, correspondingly, lending rates also declined from 21.5 per cent per annum in early February to 16.3 per cent per annum at the end of February.

The worsening of the regional crisis following the IMF intervention in Korea and Indonesia took the crisis into a phase where financial sector strains emerged and the economic contraction became more pronounced. External demand fell as regional economies began to contract. This, together with lower domestic demand, caused strains in the economy of Malaysia, which began to contract. By July 1998, it was increasingly evident that the economy would contract for the second successive quarter, implying that the country was in an economic recession.

Annualised loan growth had decelerated rapidly, from 26.5 per cent at the end of 1997 to 8.9 per cent at the end of July 1998. Similarly, the growth rate of the broad monetary aggregate, M3, had also decelerated rapidly, from 18.5 per cent to 5.9 per cent over the same period. Other macroeconomic indicators, such as car sales and collections of sales tax, also indicated a sharp slowing of economic activity. A medium-term outlook for inflation also showed a moderating trend. This warranted a shift towards an accommodative monetary policy.

Interest rates were lowered from early August onwards. The 3-month intervention rate of Bank Negara was reduced from 11 per cent per annum to 9.5 per cent per annum in three steps during August. This cautious and graduated easing of monetary policy was necessary given the prevalent volatility in the foreign exchange markets and the risk of capital inflows. Under these circumstances, a rapid reduction in interest rates in

Malaysia would have generated further instability in the financial markets and precipitated a potential outflow of funds.[54]

Of special concern was the build-up of offshore *Ringgit* balances, which were being used to finance speculation on the *Ringgit* exchange rate. This was reflected in the very high interest rates offered by banks in Singapore to attract *Ringgit* funds. This became a potential source of instability for the *Ringgit*.

One option was for Malaysia to raise interest rates to match the rates in Singapore. However, this would not only damage the real economy, but adversely affect the banking system. On 1 September 1998, Bank Negara took the pre-emptive step of introducing selective exchange controls to contain the internationalisation of the *Ringgit* and to stabilise short-term capital flows. The following day, the exchange rate was also fixed at RM3.800 to the United States dollar. Overall, these measures were intended to curb the growing amount of offshore holdings of the currency. These measures were carefully designed so as not to affect trade and foreign direct investment. Full convertibility remained for external current account transactions.[55]

These measures provided Bank Negara with the monetary autonomy that it needed to pursue policies to revive the domestic economy without worrying about instability in the *Ringgit* foreign exchange rate. Following the introduction of these measures, additional monetary measures were implemented to improve liquidity flow in the banking system to generate lending activities and to ensure that businesses had access to financing at reasonable rates. Similarly, the pace and magnitude of the reductions in Bank Negara intervention rate were also increased.

The intervention rate was reduced in three successive steps to 7 per cent per annum in November 1998. The easing of monetary policy continued into 1999 and the intervention rate was further reduced in several steps to 5.5 per cent per annum by 9 August. As a result of this aggressive easing of monetary policy, the average BLR of the commercial banks and finance companies fell from 11.7 per cent and 14.17 per cent per annum respectively in August 1998, to historical lows of 6.79 per cent and 7.95 per cent per annum by August 1999.

The sharp easing of monetary policy following the introduction of the exchange control measures has provided an environment of low interest rates and ample liquidity to support the economic recovery. Together with other macroeconomic measures, the nation has been able to weather the crisis with minimal impact on the more vulnerable

---

[54] Central Bank of Malaysia, *Monthly Statistical Bulletin*, 1998, pp. 27-28.
[55] Ibid,. from the *White Paper Status of the Malaysian Economy*, 1999, pp. 23-25.

sections of society, and without massive retrenchment and social costs. By February 1999, most key economic indicators were showing significant improvements over their third quarter 1998 levels. Inflation had been reduced from its peak of 6.2 per cent in June 1998 to 2.1 per cent by September 1999, and real output growth recovered from – 10.9 per cent in the third quarter of 1998 (-7.5 per cent for 1998 as a whole) to 4.1 per cent in the second quarter of 1999.[56]

However, during the year 2000, the focuses of Bank Negara monetary operation were aimed mainly at achieving stable liquidity conditions amid ample liquidity in the banking system. Interest rates remained low but were judiciously managed to balance the need to support economic growth, preserve price stability and sustain the nation's level of saving. In an environment of ample liquidity and the maturing of higher-cost deposits, efforts were directed at ensuring that deposit rates were maintained at levels sufficient to provide positive real rates of return to savers.

The accommodative monetary policy stance to support growth was maintained in the absence of inflationary pressures. The subdued inflation situation was reflected in the moderate increase in the consumer price index (CPI) by 1.6 per cent in 2000, compared with 2.8 per cent in the year 1999, despite the increase in bus fares and prices of petroleum products in the second half of the year. However, the overall rate of inflation was low, as the expansion in economic activity was in line with potential output. [57]

3.16 SUMMARY AND CONCLUDING REMARKS

Malaysia has succeeded in achieving high sustained growth because the government, through Bank Negara, has pursued a prudent fiscal and monetary policy. The overall government fiscal deficit will be kept at a sustainable level so that the country's external debt serving ratio remains within a manageable level. However, monetary policy will be directed towards promoting long-run growth with price and financial stability. In coping with a global environment characterised by uncertainty, monetary policy will be flexible and proactive in order to respond to new challenges effectively.

The challenges of Bank Negara and government will include managing the rapid movement of speculative and destabilising short-term capital flows and adapting to the structural transformation of the economy and financial system, financial innovations and the emergence of new payment mechanisms, such as e-money. Therefore, a strong

---

[56] Ibid,. p. 31.
[57]Central Bank of Malaysia, *Annual Reports*, Monetary Policy and Fiscal Developments, 2000, p. 1.

and resilient banking sector is a prerequisite for sustainable economic growth. In order to achieve this, the government should implement and create stronger domestic banking institutions, strengthening the supervisory framework and instilling market discipline in market players and consumers.

In addition, the merger exercise or consolidation of domestic banking institutions into 10 banking groups was carried out in order to raise their capital base and size with the aim of improving the ability of the financial institutions to absorb risk, achieve economies of scale, and enhance the risk management expertise of the banking system. The supervisory framework and prudential guidelines governing the banking system will be continually enhanced to promote prudence and minimise risk.

Therefore, for an improved product, institutional transparency will be introduced to instil market discipline into the banking system, which will enable consumers to make informed decisions regarding banks and banking products. New modalities in bank regulation will be explored, including using a market-driven approach in allocating risks and resources. Market participants will be required to provide greater disclosure and increase transparency and discipline. In addition, the supervisory authority will be vigilant in containing excessive risk-taking activities, and protecting consumer interests.

To chart the strategic direction of the banking sector, the Financial Sector Master Plan (FSMP), which was been introduced in the Third Outline Perspective Plan (OPP3), 2001-2010, will be implemented. The FSMP proposes the necessary regulatory framework to increase the resilience, competitiveness and dynamism of the Malaysian financial system. There will be a gradual and progressive liberalisation of the sector at a pace that is consistent with the institutional and regulatory framework, as well as with the requirements of the economy, in order to create a more efficient, competitive and market-driven financial sector.

Measures to identify and remove impediments to progress will be implemented, beginning with infrastructure improvements and increasing the intensity of domestic competition, so as to allow the best institutions to flourish. This will be accomplished by building the capabilities of domestic institutions and increasing the incentives for these institutions to drive performance. In addition, steps will be taken to meet the socio-economic objectives with the least possible distortion, as well as to promote a more market-driven consumer protection infrastructure.

Therefore, the programme under the FMSP will be implemented in phases over the Third Outline Perspective Period (OPP3), subject to reaching specified milestones and implementing certain safeguards. These steps have been taken to allow domestic banks

to grow in capacity and strengthen their infrastructure before introducing new foreign competition. In the case of the insurance sector, deregulatory measures will be initiated to build domestic capabilities and strengthen financial resilience, corporate governance and consumer protection mechanisms.

The deregulation of incumbent players will be accelerated in order to promote greater competition within the domestic market. The development of the Islamic banking and *takaful* sectors will first involve the strengthening of the operational and institutional infrastructure and this will be discussed in chapter four. This will be followed by greater competition and the upgrading of the infrastructure, as well as the raising of performance standards through progressive liberalisation.

Malaysia has learnt from her experiences during the 1997-1998 financial crises and realised that she needs to diversify risks in the economy by developing alternative sources of financing and reducing reliance on the banking sector. Private debt securities and secondary trading in the government securities market will be further improved to complement the stock market. An active private debt securities market will be able to accommodate larger and more complex funding arrangements to allow companies to obtain a long-term fixed rate of financing at a lower cost than bank credit. In addition, the venture capital industry will also be developed to provide equity capital to knowledge-based start-ups with high risks but good returns.

In terms of the stock market, efforts will be made to improve the dissemination of corporate information and to educate investors, particularly the retail players, so that investment decisions are made based on fundamentals. The players in the capital market need to understand fully the risks involved and adopt effective risk management systems to deal with new risks that may arise. Capital market activities should be supported by strong and internationally competitive intermediaries and institutions.

In order to address these issues and chart the strategic directions for capital market development in the longer term, the government introduced the Capital Market Master Plan (CMP). Under the CMP, it is envisaged that Malaysia will establish a world-class capital market that is internationally competitive in all core areas to support the country's capital and investment needs.

To develop internationally competitive market institutions, a single Malaysian exchange and a single Malaysian clearing house has been established. In addition, funding instruments and markets will be broadened and deepened through the development and enhancement of alternative capital raising avenues, such as the corporate bond market and venture capital. Also under the CMP, Malaysia has

developed an Islamic capital market centre as part of an effort to build upon the country's competitive advantage. The issue of the Islamic capital market will be discussed in chapter four.

CHAPTER FOUR

ISLAMIC BANKING IN MALAYSIA

4.1 INTRODUCTION

The Islamic banking system in Malaysia continues to face increasingly stiff challenges from the conventional banking system. This is because the conventional banking system has developed more competitive and innovative products for short-term and long-term financing facilities. On the other hand, the Islamic banking system is still within the secondary stage of its development. In this chapter therefore the author will examine the Islamic banking system in Malaysia and will also attempt to assess the developments which are confronting the Islamic financial system.

4.2 THE HISTORY OF ISLAMIC BANKING

Islamic banking has been emerging as a new market on the international financial scene since the 1970s. The emergence of Islamic banking was driven by the revival of Islam and the increasing number of Muslims who wanted to lead their lives in accordance with the *Shari'ah*, including in the areas of banking and finance. The successful setting-up of the first Islamic bank, the Dubai Islamic Bank, and the establishment of the Islamic Development Bank in 1975 paved the way for the establishment of Islamic financial institutions throughout the world.

Three countries, namely Iran, Sudan and Pakistan, have fully transformed their banking systems into Islamic banking systems.[1] In addition, Islamic finance has become a major global industry, with over 300 institutions involved in both Muslim countries and international financial markets. Assets managed in accordance with Islamic law are worth over US$260 billion, including financial facilities made available by banks and investments by mutual funds that have been screened for *Shari'ah* compliance. Just three decades ago even the strongest advocates of Islamic finance could not have envisaged that such progress would have been possible in the context of

---

[1] Central Bank of Malaysia, *the Central Bank and the Financial System in Malaysia-A Decade of Change-1989-1999*, 1999, p. 243.

an international financial system that was dominated by western interest-based methods of financing.[2]

In Malaysia, a separate banking legislation, the Islamic Banking Act 1983 (IBA), was enacted to allow Islamic banking to exist side by side with conventional banking. In addition, the Government Investment Act 1983 was enacted at the same time in order to allow the government to issue Government Investment Issues (GII) based on Islamic principles. The introduction of GII enables the Islamic banks to meet their liquidity requirements, as well as acting as an instrument to absorb idle funds in the short run.

Bank Islam Malaysia Berhad (BIMB) was established in July 1983 as Malaysia's first Islamic bank licensed under the IBA. As with other licensed banks, Bank Negara was vested with powers under the IBA to regulate and supervise the Islamic bank. BIMB commenced operations on 1 July 1983 with a paid-up capital of RM80 million and a branch in Kuala Lumpur. As provided in the IBA, BIMB carries out banking business similar to that of other commercial banks, but along the principles of *Shari'ah*.

The bank provides deposit-taking products such as demand deposits (current deposits) and savings deposits (time deposits) under the concept of *Al-Wadiah* (guaranteed custody) and investment deposits under the concept of *Al-Mudharabah* (profit-sharing). The bank grants financing facilities such as working capital financing under *Al-Murabahah* (cost-plus), house financing under *Bai' Bithaman Ajil* (deferred payment sale), leasing under *Al-Ijarah* (leasing) and project financing under *Al-Musharakah* (profit and loss sharing). The government decided to give BIMB a lead period of 10 years before the establishment of another Islamic bank. This was to enable the bank to focus fully on the development of Islamic banking. It also allowed BIMB to create as many products as possible to provide Malaysians, particularly Muslims, with adequate Islamic banking products and services.[3]

On the prudential side, BIMB has to observe regulatory rules similar to those applied to conventional banks. For instance, the bank has to observe a minimum risk-weighted capital ratio of 8 per cent. The bank is also required to maintain a statutory reserve account with Bank Negara, and the prescribed statutory reserve ratio as at end-June 1999 was 4 per cent of its total eligible liabilities. The only difference is in the liquidity requirement, whereby the Islamic bank observes a two-tier liquid asset ratio. The first liquid asset ratio is 10 per cent of its eligible liabilities excluding investment account

---

[2] Rodney Wilson, in his article on the Evolution of the Islamic Financial System, *Islamic Finance: Innovation and Growth*, edited by Simon Archer and Rifaat A. A. Karim, Euromoney Books and AAOIFI, London: UK, 2002, p. 29.

[3] From the Central Bank of Malaysia, the *Central Bank and the Financial System in Malaysia: A Decade of Change 1989-1999*, 1999, p. 244.

liabilities, and the second liquid asset ratio is set at 5 per cent of its investment account liabilities. As at end-June 1999, the bank complied with all the three basic regulatory requirements.

The bank was listed on the Main Board of the Kuala Lumpur Stock Exchange on 17 January 1992. In 1997, BIMB implemented a restructuring arrangement to increase its paid-up capital to RM500 million and shareholders' funds to RM970 million. By 1999, the assets of BIMB stood at RM7.1 billion while deposits and financing outstanding amounted to RM5.7 billion and RM3.8 billion respectively. It has 80 branches throughout the country and 1,670 staff manning the bank. After 15 years in existence, BIMB has proved that Islamic banking is viable and has demonstrated its ability and capability to operate in parallel with conventional banks within the banking system.

4.3 CREATING AN ISLAMIC BANKING SYSTEM

It has been a long-term objective of Bank Negara to develop a comprehensive and vibrant Islamic banking system operating side by side with the conventional banking system. To achieve this objective, Bank Negara has, over the last five years, introduced various measures to translate this objective into workable polices. Although Malaysia had already established an Islamic bank in 1983, this bank was not able to serve the needs of the entire population, especially since the operations of the Islamic bank were constrained by the limited numbers of branches and resources. Furthermore, a single Islamic bank does not constitute a banking system.

An Islamic banking system requires a large number of dynamic and pro-active players, a wide range of products and innovative instruments, and a vibrant Islamic money market. In addition to the above requirements, an Islamic banking system must also reflect the socio-economic values of Islam. In other words, it must be Islamic both in form and in substance. Malaysia has therefore developed its own model, which is described below:

4.3.1 The Malaysian model of Islamic banking system

Malaysia has developed a unique approach to Islamic banking compared with other Islamic countries in the world. So far it is the only country to implement a dual banking system, that is, a fully-fledged Islamic banking system operating on a parallel basis with a fully-fledged conventional banking system. In addition, not only do the two systems work on a parallel basis, they also utilize essentially the same banking infrastructure and

administration. This has significant implications in terms of cost and speed in implementing the Islamic banking system in Malaysia. The following paragraphs provide a comparison between the Malaysian dual banking system and other systems:

(a) The Malaysian "dual banking system" model vs. the conventional system

Muslims in countries that have only a conventional system do not have the opportunity to benefit from an interest-free banking system without being involved in the interest-based system. The only choice they have is therefore between using the facilities of the interest-based banking system or avoiding using the domestic banking facilities altogether.

(b) The Malaysian "dual banking system" model vs. the single Islamic banking system

Compared with the single system of Islamic banking, the dual banking system has at least two basic advantages, which are as follows:

(i) The range of Islamic banking products in a dual banking system tends to be wider than in a single Islamic system. In a dual banking system the Islamic banks have to provide a similar range of services to those provided by the conventional banks. In addition, the Islamic banks cannot afford to be complacent, since they operate in a competitive and dynamic economic environment in Malaysia. By contrast, in the single Islamic system model, the financial institutions would not have a similar incentive to expand the range of Islamic banking products, as the possibility of customers shifting away from the conventional system does not arise.

(ii) The Islamic banking products in the dual banking system can also be expected to be more advanced and sophisticated than those in the single Islamic banking system. In a dual banking system, innovations will quickly find their way into the banking system through innovation in the design of new products. This is a result of competition and financial engineering in the market.

4.3.2 Interest-free banking scheme/Islamic banking scheme

In order to realize the objective of setting up an Islamic banking system alongside the conventional system, Bank Negara gradually implemented measures to provide the necessary infrastructure by optimizing available resources. The first step was to disseminate Islamic banking on a nationwide basis with as many players as possible and

within the shortest time period possible. This was achieved through the introduction of the Skim Perbankan Tanpa Faedah (SPTF) (Interest-free Banking Scheme) in March 1993. The scheme allowed conventional banking institutions to offer Islamic products and services using their existing infrastructure, including staff and branches.

The scheme was launched on 4 March 1993 on a pilot basis involving three banks. Following the successful implementation of the pilot run, Bank Negara opened the scheme to commercial banks, finance companies and merchant banks in July 1993, subject to specific guidelines issued by Bank Negara. Although the participation of the banking institution is voluntary, it has to observe the requirements of the scheme, such as;

i) To establish an Islamic Banking Unit (IBU) to be headed by a senior Muslim banker,

ii) To create an Islamic Banking Fund (IBF) with a minimum allocation of RM1 million,

iii)To open separate current/clearing accounts for Islamic banking operations with Bank Negara,

iv)To register as Indirect Members under the wholesale payments system, and

v) To observe a separate cheque clearing system for Islamic banking.

The bank is also required to maintain a separate general ledger for its Islamic banking operations. These requirements will ensure that the bank does not commingle the funds freely without proper internal controls. The bank is also encouraged to appoint at least one *Shari'ah* consultant to advise on the day-to-day operations of its Islamic banking division. From only three banks in March 1993, the number of participating banking institutions increased significantly to 47 as at end-December 2000, comprising 21 commercial banks, 11 finance companies, 5 merchant banks and 7 discount houses, as shown in Figure 4.1.

The numbers of financial institutions, numbers of branches/Islamic Banking Scheme (IBS) counters and financing deposit ratio (%) as at the end of 1998 and 2003, are shown in Table 4.1.

In 1998, as part of the overall review of Islamic banking, the usage of the term SPTF was reviewed and it was found that the term did not give the right impression with regard to the Islamic banking operations undertaken by the banks. Thus, Bank Negara replaced the SPTF with the Islamic Banking Scheme (IBS), beginning 1 December 1998. Bank Negara also observed that the Islamic banking operations of the SPI were regarded as low hierarchy business, being manned by middle-level management, while the IBU was allowed limited functions to perform its duties and responsibilities effectively.

Table 4.1
Numbers of financial institutions, numbers of branches and financing deposit ratio (%) as at end of 1998-2003

Numbers of financial institutions	1998	1999	2000	2001	2002	2003
Islamic banks	1	2	2	2	2	2
Commercial banks	25	23	35	29	26	25
Finance companies	18	16	22	12	12	11
Merchant banks	5	5	5	10	10	10

Numbers of branches/IBS counters	1998	1999	2000	2001	2002	2003
Islamic banks	80	120	123	127	129	133
Commercial banks	1560	1373	1538	1462	1436	1340
Finance companies	826	738	915	872	835	721
Merchant banks	7	7	15	12	12	13

Financing deposit ratio (%)	1998	1999	2000	2001	2002	2003
Islamic banks	90.3	51.3	57.5	61.8	65.4	67.2
Commercial banks	52.3	45.9	49.3	52.1	54.8	56.2
Finance companies	78.7	98.8	89.5	76.7	79.3	81.4
Merchant banks	69.4	193.9	154.3	128.6	135.9	125.1

Sources: Compiled by the author using data from
www.bnm.gov.my/fin_sys/islamic/key_data.htm/, 2000. (12th October, 2003)
Compiled by the author from
www.bnm.gov.my/index.php?ch=109&pg=294&mth=6&yr=2004, *Monthly Statistical Bulletin*, Bank Negara Malaysia.

As part of the ongoing efforts to promote Islamic banking further, the existing organization structure, scope and responsibilities of the IBU were reviewed and enhanced by introducing a new framework as follows:

(a) Effective from 2 January 1999, the IBU was upgraded to an Islamic Banking Division (IBD). The IBD would be the one-stop centre responsible for all aspects of Islamic banking operations, such as retail banking, commercial banking, corporate banking, trade/international banking, treasury operations, corporate planning and branch operations. This included product development, marketing, processing, and approving limits, branches supervision and credit control.

b) The IBD was also required to prepare a strategic plan to chart the future direction of Islamic banking in the banking institution on a medium-term basis.

c) The IBD was expected to have a working relationship with other departments/divisions and should be provided with the necessary support from the departments/divisions in ensuring the smooth implementation of Islamic banking operations, particularly in areas where the same infrastructure was being shared.

d) The IBD should be proficient in applying accounting standards (including Islamic banking accounting standards), legal and regulatory requirements, directives and

guidelines issued by Bank Negara and other authorities, including roles and regulations issued by the relevant banking associations.

e) As a division, which operates like a "bank within a bank", the level of resources should be justified and commensurate with the expected cost and profitability of the IBD, with a minimum staff requirement.

f) The IBD should be headed by a Muslim senior management officer of the bank, of at least the level of Assistant General Manager (AGM). The position of the AGM should be equivalent to the status of other key functional heads to enable him to deal effectively with his peers and supervisors when discharging his duties and responsibilities. Importantly, the AGM should be functionally responsible to the Chief Executive Officer (CEO). Initially, the AGM was allowed to carry out banking duties and responsibilities other than Islamic banking during an interim period of two years (1999-2000). Beginning 1 January 2001, the AGM should perform his duties and responsibilities with regard to Islamic banking on a full-time basis.

In tandem with the enhancement of the IBU, the Islamic Banking Financing (IBF) of the Islamic Banking Scheme (IBS) commercial banks and finance companies was increased from RM1 million to RM5 million, and to RM3 million for the merchant banks, effective from 2 January 1999. By 1 January 2001, the Islamic Banking Financing (IBF) for the commercial banks and the finance companies would be further increased to RM20 million and RM10 million respectively, and to RM6 million for the merchant banks.

4.4 THE ISLAMIC FINANCIAL SYSTEM

The Islamic financial system in Malaysia can be classified into three main categories, namely the Islamic banking system, the non-bank Islamic financial intermediaries and the Islamic money market. In addition, the Islamic financial system is characterized by two different types of institution, namely:

(a) Fully-fledged Islamic financial institutions, and

(b) Conventional financial institutions with Islamic windows.

4.4.1 The Islamic banking system

The Islamic banking system comprises Bank Negara, the Islamic banks and the other financial institutions (i.e., commercial banks, finance companies, merchant banks and

discount houses) participating in the Islamic Banking Scheme (IBS), as shown in Figure 4.1.

(a) Fully-fledged Islamic banking institutions

At present there are two Islamic banks operating in Malaysia, namely Bank Islam Malaysia Berhad (BIMB) and Bank Muamalat Malaysia Berhad. Bank Islam Malaysia Berhad is the first Islamic bank in Malaysia, which was established in July 1983 under the Islamic Banking Act 1983 (IBA). By May 2002, Bank Islam Malaysia Berhad operated a total of 87 branches with a staff of about 1,700 people.[4]

Bank Muamalat Malaysia Berhad (BMMB) is the second Islamic bank, which was established on October 1, 1999. The establishment of Bank Muamalat Malaysia Berhad was the result of the merger of Bank Bumiputra Malaysia Berhad (BBMB) and the Bank of Commerce (M) Berhad (BOC). Bank Muamalat Malaysia Berhad commenced operations with 1,009 staff, absorbed mainly from the former Bank Bumiputra Malaysia Berhad, and operating 40 branches throughout the country. The paid-up capital of Bank Muamalat Malaysia Berhad was RM300 million.[5]

With the establishment of Bank Muamalat Malaysia Berhad, Bank Islam Malaysia Berhad lost its monopoly status as the only fully-fledged Islamic financial institution. In addition, the creation of Bank Muamalat Malaysia Berhad will ensure competition for Bank Islam Malaysia Berhad, which has come under criticism from the public over recent years for its over-cautious and bureaucratic approach.

(b) Conventional financial institutions with Islamic windows

The commercial banks are the largest group of financial institutions participating in the Islamic Banking Scheme (IBS) in the Islamic banking system. The number of commercial banks in the Islamic banking system at the end of December 2000 was 21, as shown in Figure 4.1. As indicated in Table 4.1, the total assets of the commercial banks under the Islamic banking system were RM20.1 billion.

The second largest group of financial institutions in the Islamic banking system is the finance companies. There were 11 finance companies participating in the Islamic Banking Scheme (IBS) at the end of 2000 (see Figure 4.1), with total assets of RM3.7

---

[4] Bank Islam Malaysia Berhad, *Total Branches and Staff*, www.bankislam.com.my/berita_mei 23_e.htm/. (14th October, 2003)

[5] Bank Negara Malaysia, *Islamic Financial System*, www.bnm.gov.my/fin_sys/islamic/index.htm/. (15th October, 2003)

billion. Merchant banks are the third group in the Islamic banking system and there are 5 Islamic Banking Scheme (IBS) merchant banks. At the end of 2000, the total assets of Islamic Banking Scheme merchant banks amounted to RM927 million, as shown in Table 4.1.

Figure 4.1
Key players in Islamic banking in Malaysia

1. Bank Negara Malaysia

Islamic Banks
2. Bank Islam Malaysia Berhad
3. Bank Muamalat Malaysia Berhad

Commercial Banks
4. Arab-Malaysian Bank Berhad
5. Ban Hin Lee Bank Berhad
6. BSN Commercial Bank Berhad
7. Bank Utama Malaysia Berhad
8. Citibank Berhad
9. EON Bank Berhad
10. Hock Hua Bank Berhad
11. Hong Leong Bank Berhad
12. HSBC Bank Malaysia Berhad
13. International Bank Malaysia Berhad
14. Malayan Banking Berhad
15. Multi-Purpose Bank Berhad
16. OCBC Bank Malaysia Berhad
17. Oriental Bank Berhad
18. Perwira Affin Bank Berhad
19. Public Bank Berhad
20. RHB Bank Berhad
21. Sabah Bank Berhad
22. Southern Bank Berhad
23. Standard Chartered Bank Malaysia Berhad
24. The Pacific Bank Berhad

Finance Companies
25. Asia-Commercial Finance Berhad
26. Arab-Malaysian Finance Berhad
27. Cempaka Finance Berhad
28. Credit Corporation (M) Berhad
29. EON Finance Berhad
30. Hong Leong Finance Berhad
31. Interfinance Berhad
32. Kewangan Bersatu Berhad
33. Mayban Finance Berhad
34. MBf Finance Berhad
35. United Merchant Finance Berhad

Merchant Banks
36. Amanah Merchant Bank Berhad
37. Arab-Malaysian Merchant Bank Berhad
38. Aseambankers Berhad
39. Malaysian International Merchant Bank Bhd
40. Perwira Affin Merchant Bank Berhad

Discount Houses
41. Abrar Discount Berhad
42. Affin Discount Berhad
43. Amanah Short Deposits Berhad
44. BBMB Discount House Berhad
45. KAF Discount Berhad
46. Malaysian Discount Berhad
47. Mayban Discount Berhad

Source: Compiled by the author using data from *Islamic Banking List of Players Reports*, www.bnm.gov.my/fin_sys/islamic/players.htm/, 1997-2000. (13th October, 2003)

The discount houses, also new entrants in the Islamic banking system. have been allowed to participate in the Islamic Banking Scheme since 1998. Their operations focus mainly on short-term Islamic money market operations and the underwriting of Islamic debt securities.

4.4.2 The Islamic Money Market

An important development in the Islamic financial system was the establishment of the Islamic money market on 3 January 1994. An Islamic money market is integral to the smooth functioning of the Islamic banking system. It plays an important role:

(i) In providing Islamic financial institutions with facilities for adjusting portfolios over the short term, and

(ii) In serving as a channel for the transmission of monetary policy.

Hence, as the Islamic banking sector becomes more significant in terms of mobilizing resources for financing economic activities, the need to develop an Islamic money market would naturally gain in importance. Bank Negara did not have the benefit of an existing model Islamic money market in any part of the world to emulate and therefore had to pioneer its own ideas in order to achieve this aim.

After careful consideration, Bank Negara decided to implement the Islamic money market on the basis of the concept of *Al-Mudharabah* or profit-sharing. Specific guidelines were issued preceding the establishment of the Islamic money market in December 1993 to ensure the smooth implementation and running of the market. The Islamic money market has three aspects, namely the trading of Islamic financial instruments, *Al-Mudharabah* inter-bank investments (MII) and the Islamic cheque clearing system (ICCS).

The Islamic bank and SPI banks are allowed to trade in Islamic financial instruments such as Islamic accepted bills, green banker's acceptances, Islamic bonds and Islamic commercial papers, as well as 'Cagamas Mudharabah' bonds, among themselves. The MII refers to a mechanism whereby a surplus SPI bank/Islamic bank can invest in a deficit SPI/Islamic bank on the basis of the principle of *Al-Mudharabah*. The term of MII is from overnight to 12 months while the minimum amount of investment is RM50,000. The profit-sharing ratio is negotiated among the transacted parties but the rate of return shall be based on the gross profit before distribution for investments of 1 year of the 'investee (receiving)' bank.

After monitoring the progress of the Islamic money market during the period 1994-1995, it was realized that adequate incentives had not been put in place to promote efficiency, specifically in terms of rewarding the provider of funds. Although the provider of funds dictated the profit-sharing ratios, the onus was on the investee bank to declare the return on maturity. Such a situation led to exploitation of inefficient banks, thereby hampering the overall integrity of the market. In view of this, Bank Negara introduced the minimum benchmark for MII in February 1995 using the prevailing rate of the GII plus a spread of 0.5 percentage points. Accordingly, they were required to observe the minimum benchmark as a reference rate. This has resulted in the banks entering the market when they are really short of funds and in a position to use the funds efficiently.[6]

The success of the several types of Islamic financing caused Bank Negara to recognise the need for a separate cheque clearing system for Islamic banking in order to distinguish it from the conventional cheque clearing system. In January 1994, Bank Negara devised a mechanism for segregating Islamic banking cheques from conventional banking cheques from the moment the cheques were issued. This was made possible by the fact that the SPI commercial banks and the Islamic bank were required to maintain a demand deposits *Al-Wadiah* (current account) with Bank Negara to facilitate the clearing arrangement, apart from the existing conventional bank account.

The banks were also required to empower Bank Negara under the concept of *Al-Wakalah* to square their funding position between the surplus banks and the deficit banks during the automatic cheque clearing system at 12.00 midnight. Should the deficit persist, it would be funded by Bank Negara according to the principle of *Al-Mudharabah*, subject to a maximum of three times in a week, following which a penalty would be imposed.

In managing liquidity in the Islamic Money Market, Bank Negara employs two financial tools, namely the *Al-Mudharabah* money market tender and the *Bai Al-Einah Contract*. In August 1999, Bank Negara introduced the *Al-Mudharabah* money market tender to enhance further the operations of the MII. The *Al-Mudharabah* money tender is conducted through the acceptance tender and the investment tender. The former would be used if Bank Negara intended to absorb liquidity from the Islamic money market during times of excess liquidity, and the latter if there were a need to inject liquidity into the Islamic money market when the overall market was in deficit.

---

[6] Ibid., pp. 247 – 248.

The *Bai Al-Einah Contract* (BAEC)[7] refers to the issuance of Islamic papers by Bank Negara to inject funds into banking institutions that face difficulties in meeting their daily cash flow requirements, particularly those which could not meet the minimum benchmark rate in the MII. The BAEC papers, however, can only be traded between Bank Negara and the participating banking institutions. The availability of these instruments has assisted Bank Negara injecting liquidity into the Islamic money market in an efficient manner, as well as in enabling Bank Negara to use the appropriate instrument under different circumstances.

All these measures have improved the performance of MII significantly. From the meager sum of RM2.1 billion transacted in 1994, the Islamic money market surpassed the RM100 billion mark by recording total transactions of RM138 billion and RM118 billion in 1997 and 1998 respectively. The cumulative volume for the first six months of 1999 amounted to RM238 billion.

Table 4.2 shows that the total financing was just RM 249,800 millions in 1983, because at that time, only Bank Islam Malaysia Berhad (BIMB) was offering financing to customers. However, the total financing followed a pattern of increase from 1983 until 1992, (total Islamic financing was RM1,028,724 millions), however, the government aspires to create a vibrant and comprehensive Islamic banking and finance system operating side by side with the conventional system.

A single Islamic bank is not appropriate for the definition and efficiency of the system. An Islamic banking and finance system requires a large number of dynamic and pro-active players, a wide range of products and innovative instruments, and a vibrant Islamic money market. Therefore, steps have been taken towards realizing the vision of disseminating Islamic banking on a nationwide basis with as many players as possible and within the shortest period of time. As a result of these policies, we see the enormous increase in Islamic financing from RM1,028,724 millions in 1992 to RM12,704,631 millions in 2002. In addition, financing from Islamic banking alone increased to RM4,953,865 in 2002. The total amount of Islamic banking financing at the end of 2002 reached more than RM12 billion in various projects. The total amount of Islamic financing is shown in Table 4.2.

This increase was achieved through the introduction of the Islamic Banking Scheme (IBS) in March 1993. The Islamic Banking Scheme (IBS) allows conventional banking institutions to offer Islamic banking products and services using their existing

---

[7] This is a loan in the form of sale, called '*einah*' (façade) because it is a sale in appearance only. This is accomplished by one's buying back what one has sold for a lower price than that for which one originally sold it. The difference, ostensibly profit, is actually a loan.

infrastructure, including staff and branches. The scheme was launched on 4 March 1993 on a pilot basis involving three banks: Bank Simpanan Nasional, Bank Rakyat and Bank Pembangunan dan Infrastruktur Malaysia. Following the successful implementation of the pilot run, Bank Negara allowed other commercial banks, finance companies and merchant banks to operate the scheme in July 1993 subject to the specifics issued by Bank Negara.

Table 4.2

Total financing of Islamic banking, 1983-2002 (RM million)

Year	Islamic Banks	Commercial Banks	Finance Companies	Merchant Banks	Islamic Banking Scheme	Total
1983	249,800	-	-	-	-	249,800
1984	161,111	-	-	-	-	161,111
1985	391,972	-	-	-	-	391,972
1986	525,000	-	-	-	-	525,000
1987	428,590	-	-	-	-	428,590
1988	609,374	-	-	-	-	609,374
1989	666,056	-	-	-	-	666,056
1990	817,398	-	-	-	-	817,398
1991	808,152	-	-	-	-	808,152
1992	1,028,724	-	-	-	-	1,028,724
1993	1,058,978	3,741	2,491	-	6,232	1,065,210
1994	1,274,929	274,069	163,460	25,310	462,839	1,737,768
1995	1,966,597	842,557	452,872	229,986	1,525,415	3,492,012
1996	2,259,069	2,125,213	1,224,931	392,518	3,742,662	6,001,731
1997	3,350,689	4,705,766	2,189,934	502,962	7,398,662	10,749,351
1998	3,649,920	4,487,100	2,107,675	420,928	7,015,703	10,665,623
1999	4,093,204	4,502,104	2,204,602	442,500	7,104,330	11,242,410
2000	4,306,821	4,602,401	2,310,320	500,302	7,304,441	11,719,884
2001	4,503,240	4,696,342	2,397,052	548,881	7,553,108	12,145,515
2002	4,953,865	4,721,087	2,443,032	586,647	8,054,200	12,704,631

Source: Compiled by the author using data from
www.bnm.gov.my/fin_sys/islamic/total_financing.htm/. (14th October, 2003)

From only three banks in March 1993, the number of Islamic financial institutions has increased to 47, including the Bank Negara Malaysia (see Figure 4.1), comprising 21 commercial banks (of which 4 are foreign banks), 11 finance companies, 5 merchant banks and 7 discount houses. In addition to these on 1 October 1999, the second Islamic bank, Bank Muamalat Malaysia Berhad, was established.

4.5 ISLAMIC BANKING SERVICES

The major resource of Islamic banks is deposits taking, as with conventional banks. Islamic banks do not pay interest to the depositors as conventional banks do, as

discussed in the previous chapter, but share their profits with their customers. Currently, Islamic banks offer three main types of deposit account to their depositors:
(a) demand deposits (current accounts), (b) savings deposits (time accounts), and (c) investment deposits (investment accounts).

(a) Demand deposits

In theory, demand deposits in Islamic banking do not provide a rate of return to depositors, since the depositors keep their money in these accounts for safe keeping (*Al-Wadiah*) only, and this is arranged between the depositors and the banks. The Islamic bank also allows the depositors to withdraw their money at any time and the bank is permitted to use their money, as with conventional banks. However, in practice, Islamic banks in Malaysia provide a rate of return (profit-sharing) to their depositors from their uses of depositors' funds.

As is the case with conventional banks, Islamic banks also provide cheque books to their deposit holders, and at the same time provide a broad range of facilities to their customers, such as clearing mechanisms, bank drafts, bills of exchange and other services.

(b) Savings deposits

Savings deposits in Islamic banks are not very different from those in conventional banks. Islamic banks also place certain restrictions on how much of their money depositors can withdraw and when. However, Islamic banks do not provide any fixed return to their depositors, but instead share the profits with their customers, since these savings deposits also operate under the concept of safe keeping (*Al-Wadiah*), as with demand deposits.

In addition, according to *Shari'ah* scholars in Malaysia, holders of demand deposits and savings deposits may receive a return (profit-sharing) from their deposits because the bank uses their money for the purpose of making a profit. Generally, Islamic banks give a return to the depositors depending on their profits, and this payment is permitted, or lawful, since the profit-share is not fixed or predetermined. The profit-share given by Islamic banks is like a gift to their customers, and this is exactly the type of action that has been taken by Bank Islam Malaysia Berhad with its customers.

(c) Investment deposits

Investment deposits in Islamic banks are very similar to the fixed deposits (fixed accounts) in conventional banks, however, Islamic banks treat these deposits as participatory accounts. On the other hand, the rates of return (profit-sharing) to depositors in Islamic banks fluctuate according to their profits, unlike the rates offered by conventional banks, which are determined or fixed by arrangement between the depositors and the banks.

In Malaysia, investment deposits in Islamic banks may be distinguished from conventional banks fixed deposits (fixed accounts) in the following ways:

(i) Fixed deposits (fixed accounts) in the conventional banking system operate on the basis of an interest rate, whereas investment deposits in the Islamic banking system operate on the basis of profit-sharing. In Islamic banks, instead of a given fixed rate of return (interest rate) to depositors, the banks and depositors agree in advance the share of the profits that each will receive, say, 60:40, in favour of the banks. Generally, the agreed distributed profit ratio is mentioned in the contract, but how much the depositors will get depends on the bank's own investment profit.

(ii) In the conventional banking system fixed deposits, the rate of return (interest rate) to the depositors is determined according to the maturity of their deposits (i.e., three months, nine months and twelve months) and pre-arranged when the contract is drawn up between the depositors and the banks.

However, investment deposits in the Islamic banking system may be distinguished on the basis of maturity and on the basis of the purpose of the investment. Generally, the banks will ask their customers about and give advice on what-ever project or trade they would like to invest their money in. The depositors will get their rate of return (profit-sharing) depending on the agreed ratio and the profit made by the banks.

4.5.1 Islamic banks deposit growth

From the above discussion, it can be seen that the Malaysian authorities have successfully implemented Islamic banking under the dual banking system. In a short period of time, which about two decades (1983-2003), Islamic banking accounts have received massive deposits from their clients or customers in terms of demand deposits, savings deposits and investment deposits. The Islamic banking system's total deposits can be seen in Table 4.3.

Table 4.3 shows that the direction or trend in deposits can be explained in two phases. Firstly, from the beginning of 1983 until 1993, the trend is one of slow increase. One reason for this is that during this period there was only one Islamic bank offering Islamic products and services, namely, Bank Islam Malaysia Berhad (BIMB). Another reason is that the bank had a limited number of branches, limited numbers of qualified staff and a limited infrastructure.

However, there was a comparatively rapid growth in deposits over the 1984 to 1987 period, as the concept of Islamic banking attracted Muslim depositors, specially those who wanted to deposit their money in Islamic banks. This means that Islamic bank deposits grew rapidly during the years of economic stagnation, since at that time the GDP fell by 1 per cent in 1985 and grew by only approximately 1 per cent in 1986. Subsequently, between 1987 and 1993, Malaysian gross domestic product growth actually accelerated from 5.4 per cent to 9.5 per cent.

Table 4.3
The Islamic banking system's demand deposits, time and investment deposits, 1983-2001 (RM million)

Year	Islamic Demand Deposits	Islamic Savings (Time) Deposits	Islamic Investment Deposits	Total Deposits	Annual GDP Growth Rate
1983	85.0	125.0	254.0	464.0	6.2
1984	127.1	195.1	331.1	653.3	7.8
1985	139.5	250.3	365.0	754.8	-1.1
1986	168.2	290.7	406.5	865.4	1.2
1987	189.2	317.3	515.2	1,021.7	5.4
1988	213.7	342.2	652.7	1,208.6	9.9
1989	221.2	350.3	667.1	1,238.6	9.1
1990	231.8	375.3	672.5	1,297.7	9.0
1991	236.1	382.6	687.1	1,305.8	9.5
1992	341.2	389.9	667.8	1,398.9	8.9
1993	407.5	421.1	784.3	1,612.9	9.9
1994	1,425.9	1,491.0	1,673.2	4,590.1	9.2
1995	1,303.9	1,347.6	1,978.4	4,629.9	9.8
1996	1,720.9	1,796.8	4,525.9	8,043.6	10.0
1997	1,875.8	2,114.2	4,865.5	8,855.5	7.5
1998	2,368.4	4,572.3	6,732.8	13,673.5	-7.5
1999	2,959.7	5,673.6	15,867.5	24,500.8	4.3
2000	4,560.4	6,763.4	19,929.8	31,253.6	5.2
2001	5,380.7	7,307.7	25,676.3	38,364.7	3.1

Sources: Compiled by the author using data from the *Central Bank and the Financial System–A Decade of Change, 1989-1999*, Islamic Banking and Takaful, Central Bank of Malaysia, 1999, p. 657
Compiled by the author using data from the *Annual Reports*, Central Bank of Malaysia. (Various issues)

However, during these years, Islamic bank deposits grew slowly. Therefore, it is clear that there is no real correlation between the growth of gross domestic product

(GDP) and the development of the growth in Islamic bank deposits. This observation is similar to that of Rodney Wilson in his book *Islamic Finance*, 1997, p. 127,

> "Malaysian gross domestic product growth actually accelerated from 5.4 per cent to 9.7 per cent. The years of economic stagnation had been the mid-1980s, with GDP falling by 1 per cent in 1985 and growing by a mere 1 per cent in 1986. Yet these were the years when Islamic Bank deposits grew rapidly. It seems there is no correlation between macroeconomic performance and that of the Islamic Bank."[8]

Secondly, from the beginning of 1993 onwards, the trend in deposits shows quite a sharp increase. The reason behind this fast rate of growth in deposits is that steps had been taken by the Bank Negara to decimate Islamic banking on a nationwide basis with as many players as possible and in the shortest time period possible. This was achieved through the introduction of the Skim Perbankan Tanpa Faedah (SPTF) in March 1993. This scheme allows constitutional banking institutions to offer Islamic products and services using their existing infrastructure, including staff and branches.

As shown in Table 4.3, most deposits with Islamic banks in Malaysia were in savings or investment accounts rather than in demand deposits (current accounts). However, after 1993, the savings and demand deposits increase in a similar pattern. It seems that clients of Islamic banking in Malaysia viewed the bank as a repository for precautionary and savings funds, rather than for transaction balances.

The depositors deposit their money as long-term holdings such as savings to cover the deposit on a house, the purchase of a major consumer item such as a car, education fees, pilgrimage expenses, payment for a marriage feast or for the cost of health treatment in old age.[9] However, some customers deposit their money in Islamic banks in order to obtain a greater return/reward, as we can see from Table 4.6, where the rate of return to depositors is shown to increase year by year for every demand deposit in the Malaysian Islamic banks.

As Table 4.6 illustrates, the bank itself has encouraged longer-term rather than short-term deposits through its rate of return or profit-sharing distribution policy on demand, time and investment deposits. The rate of return on deposits increased sharply year by year. Over 70 per cent of time and investment deposits are at six months and one year notice or more. In addition, the rates of return to depositors in Islamic banks are comparable with the interest paid by conventional banks in Malaysia. It seems there is

---

[8] Rodney Wilson, *Islamic Finance*, FT Financial Publishing, Pearson Professional Limited, London: UK, 1997, p. 127.

[9] Ibid., for more details see Rodney Wilson, *Islamic Finance*, 1997, p. 128. See also Rodney Wilson, *Islam and Malaysia's economic development*, 1998, p. 270.

a strong correlation between rate of return/profit-sharing and the growth of deposits in Islamic banks.[10]

In sum, there appears to be a close association between gross domestic product growth and conventional bank demand deposits, as illustrated in Table 3.5 (p. 57). In addition, there are moderate associations between conventional bank deposits and the interest rate, as shown in Table 3.5 and 3.7 (pp. 59-60).[11] There does seem to be a close association between what was happening to the macroeconomy and aggregate conventional bank deposits. Demand deposits in Malaysian commercial banks fell by around 1 per cent a year in 1984-1986, and time deposits fell by over 2 per cent annually in the period 1984-1987.

The latter trend may have reflected the fall of over 6 percentage points in the interest on time deposits, from 9.5 per cent in 1984 to 3 per cent by 1987.[12] When interest rates for savings deposits again rose from 4 per cent in 1988 to around 5 per cent in 1989, time deposits also increased by approximately 37 per cent (see Table 3.6), indicating that for Malaysian depositors, especially in the Chinese community, interest rates affect financial behaviour.

During this period, the inflation rate was low, between 2 and 4 per cent annually, except in mid-1997 and during 1998, when the rate of inflation was approximately 6 per cent. This implies that the need to maintain real cash balances was probably not a significant factor in explaining deposit growth, but that what mattered was the fast pace of real growth.[13]

As Table 4.4 shows, the rate of return to depositors in the Islamic banks has increased year by year. Such trend of the rate of return to depositors allowed depositors to plan their financial affairs in an orderly fashion. This trend of rate of return by Islamic banks is aimed to encourage clients, especially Muslims, to deposit their money over the long term. The benefit for the bank is a more stable deposit base, which enables its manager to think strategically about the bank's funding policies, rather than being forced to maintain high short-term returns in order to avoid a run on deposits.[14]

Generally speaking, this shows that the Islamic banks act as savings institutions rather than as big financial players. However, their success in attracting deposits, especially after the introduction of the Skim Perbankan Tanpa Faedah (Interest-free Banking Scheme) in 1993, has made Islamic banks active players with an important role,

---

[10] For more details see regression results, pp. 185-191.
[11] These observations are similar to the regression result; for more details see Chapter Six.
[12] Rodney Wilson, op. cit., p. 127.
[13] Rodney Wilson, op. cit., p. 128.
[14] Ibid., p. 129.

side by side with conventional banks, in monetary and socio-economic development in Malaysia.

Table 4.4
Rate of return (profit-sharing) to depositors in the Islamic banking system in Malaysia, 1983-2001 (%)

Year	Profit-sharing for Islamic demand deposits (SPSD)	Profit-sharing for Islamic savings deposits (SPST)	Profit-sharing for Islamic investment deposits (IPS)
1983	2.50	3.25	4.55
1984	2.46	3.23	4.73
1985	2.33	3.06	4.16
1986	2.45	3.26	4.36
1987	2.60	3.15	4.25
1988	2.46	3.25	4.15
1989	2.60	3.59	4.49
1990	2.57	4.14	5.34
1991	2.58	4.37	5.37
1992	2.46	4.40	5.43
1993	2.63	4.45	5.56
1994	2.60	4.52	5.62
1995	2.56	4.89	5.65
1996	2.36	4.99	5.85
1997	2.62	5.05	5.94
1998	2.60	5.14	6.14
1999	2.58	5.38	6.28
2000	2.43	5.46	6.36
2001	2.45	5.57	6.45

Sources: Compiled by the author using data from the *Monthly Statistical Bulletin*, Central Bank of Malaysia. (Various issues)
Compiled by the author using data from the *Central Bank and the Financial System in Malaysia–A Decade of Change, 1989-1999*, Central Bank of Malaysia, 1999, pp. 610-662
Compiled by the author using data from the *Commercial Banks* and the *Finance Companies* in Malaysia. (Various issues)

4.5.2 Financial policy of the Islamic banks in Malaysia

Table 4.5 illustrates the distribution of Bank Islam funding in Malaysia by sector. Nearly half of Bank Islam financing is for housing, real estate and construction purposes, approximately 44.15 per cent of their total financing in 2002 and 38.86 per cent in 2001.

Investments in the manufacturing sector were the fourth largest after the others, and comprised about 17.12 per cent of total financing in 2002 and 16.54 per cent in 2001. Much of the manufacturing financing was used to support equipment purchases by small industrial establishments. The industries supported usually had the backing of *Bumiputra* Muslim investors or trust agencies. Only a mere 4 per cent was allocated for financing in the agricultural sector. Arguably, if a larger proportion of financing had

been given to the agricultural sector it would have directly benefited the *Bumiputra* more, by backing Muslim rural landowners. This analysis is not a surprise as a similar observation was made by Rodney Wilson in his book *Islamic Finance*, 1997, p. 129, where he states that:

> "Basically Bank Islam Malaysia is a retail financial institution dealing with personal customers and small business clients, and to a much lesser extent Muslim landowners and traders, rather than a big business or wholesale institution involved with industry and other banks and financial institutions. It has undertaken a relatively large number of financing deals, with over 16,700 outstanding in the 1992-93 financial year, but this meant an average financing of only RM57,450 or $21,687. The larger advances were for housing purchase, land acquisition and construction and smaller amounts for manufacturing and trade.
>
> Investments in manufacturing were proportionately much greater than for most Islamic banks in other Muslim countries, largely reflecting Malaysia's status as a newly industrialising country."[15]

Nearly two thirds of the financing of Bank Islam Malaysia was in the form of deferred payments trade credit, or *Al-Bai Bithaman Ajil*.[16] Under this type of funding the bank finances the purchase of goods on behalf of a client, who later repays the banks at an agreed mark-up. The deferred period for the payment is typically one to three months, similar to the period for trade credit from a conventional commercial bank.

Table 4.5
Distribution of Bank Islam Malaysia finance (RM million)

Sector	2002	Per cent (%)	2001	Per cent (%)
Agriculture, Mining and quarrying	256,979	4.18	394,162	7.23
Manufacturing	1,052,305	17.12	901,921	16.54
Real estate and construction	1,325,870	21.58	966,394	17.72
Housing	1,386,971	22.57	1,152,810	21.14
General commerce	220,063	3.58	84,164	1.54
Finance, insurance and business services	166,979	2.73	85,407	1.57
Consumption credit	343,571	5.59	492,837	9.04
Others	1,391,585	22.65	1,375,190	25.22
Total	6,144,585	100.0	5,452,885	100.0

Source: Compiled by the author using data from *the Gross Financing of Customers Analysed by their Economic Purposes*, www.bankislam.com.my/AR/AR02_1%20.pdf/. (17th October, 2003)

---

[15] Rodney Wilson, op. cit., p. 129.
[16] This type of financing is usually used in the short-term.

Bank Islam Malaysia is, of course, taking a risk with regard to such financing, as the client may not be in a position to make the deferred payment. It is this risk which justifies its return under Islamic law, as it could be said to be underwriting the client. The fact that the terms are fixed in advance, and freely agreed by all parties, makes the transaction fair and just from an Islamic point of view.

The methods of financing customers by Bank Islam Malaysia can be seen from Table 4.6. As the table shows, the *Al-Murabahah*[17] contract was the second largest method of financing customers by Bank Islam Malaysia in 2002 and 2001. Under this type of financing the bank actually purchases the goods on behalf of the client, and then resells them to the client for a mark-up, typically in three and six months' time. With such financing there is not only the risk of payment default, as with *Al-Bai Bithaman Ajil*, but there is also the ownership risk associated with having legal title to the goods.

The merchandise or equipment may be defective, or could be damaged or lost as a result of an accident. In this case the bank is not merely assuming a financing risk, but is also taking on a business risk associated with the handling and use of the item in question. The element of participatory finance is much greater, and there is a real degree of risk sharing.[18]

Table 4.6

Methods of financing customers by Bank Islam Malaysia in 2002 and 2001 (RM million)

Method	2002	Per cent (%)	2001	Per cent (%)
Al-Bai Bithaman Ajil	3,475,374	56.56	3,068,790	56.28
Ijarah Muntahiah Bi-Tamlik	176,110	2.88	288,996	5.30
Al-Ijarah	111,064	1.81	108,203	1.98
Al-Bai Al-Inah	21,253	0.35	-	-
Al-Musharakah	216,934	3.53	177,075	3.25
Al-Mudharabah	40,306	0.65	18,770	0.34
Al-Murabahah	1,515,033	24.65	1,304,628	23.93
Qardhul Hassan	497,216	8.09	420,341	7.71
Staff financing	91,033	1.48	66,082	1.21
Total	6,144,323	100.0	5,452,885	100.0

Source: Compiled by the author using data from *Financing of Customers*, www.bankislam.com.my/AR/AR02_1%20.pdf/. (17th October, 2003)

With regard to the financing method for the longer period, i.e., for one to five years' leasing, the islamically acceptable *Al-Ijarah* practice has been used. Around 2 per cent (in 2002 and 2001) of Bank Islam Malaysia finance was on this basis, with the client having the opportunity to purchase the goods for a predetermined nominal sum at the

---

[17] This type of financing is usually used in the long-term.

[18] Ibid., p. 130. See also Rodney Wilson, *Islam and Malaysia's Economic Development*, 1998, pp. 271-272.

end of the leasing period in a type of hire purchase arrangement. The bank owns the goods being leased, but has to lower the value of its leased assets each year. It has two options in this respect.

One is to take account of the resale market value if the client defaults on the lease, as the longer the time period, the less the secondhand equipment will be worth. The alternative practice, and the method followed by Bank Islam Malaysia, is to allow for a reduced number of future payments as the years pass.[19]

The total financing of the Bank Muamalat Malaysia Berhad, which is the second Islamic bank in Malaysia, was RM1.8 billion in 2000,[20] RM2.0 billion in 2001, and RM2.3 billion in 2002.[21]

4.6 GUIDELINES FOR THE ISLAMIC BANKING INDUSTRY

Since the inception of the Skim Perbankan Tanpa Faedah (SPTF) in 1993, Bank Negara has made it mandatory for the Islamic banking operations of the SPTF to be segregated from conventional banking operations. These segregation procedures, coupled with the internal separation of the accounting books of each SPTF, have made it possible for the SPTF banks to disclose a true and fair value of Islamic banking operations during the financial year. Given that the depositors in Islamic banking also assume the role of investors as far as *Al-Mudharabah* deposits are concerned, it makes sense that they should be kept informed of the performance of the Islamic banking operations undertaken by the SPTF banks.

In October 1996, Bank Negara issued the specimen Financial Statements known as GP8, to prescribe the minimum standards for the disclosure of SPTF banking operations. Under GP8, the disclosure of Islamic banking operations would constitute a special section in the Notes to the Account of the principal financial statements. The Notes to the Accounts would have a section dedicated to showing the balance sheet and the profit and loss of the Islamic banking operations in the SPTF operations.[22]

---

[19] Ibid., p. 131.
[20] Period from April 2000 to December 2000.
[21] Bank Muamalat Malaysia, *Bank Muamalat–Total Financing*, www.muamalat.com.my/default.asp?page=annual/. (18th October, 2003)
[22] Rodney Wilson, op. cit., p. 249.

4.6.1 Product incentives and developments

To increase the attractiveness of Islamic banking, in April 1995, Bank Negara allowed SPTF commercial banks to offer *Al-Ijarah* (Islamic leasing) facilities under the SPTF, subject to a minimum size per transaction of RM200,000.00. In December 1998, Bank Negara liberalized the acceptance of Islamic repo from non-interbank customers to include all Islamic Banking Scheme (IBS)[23] operators, a privileged niche previously accorded only to principal dealers. In April 1999, Bank Negara allowed the Islamic bank and the commercial banks participating in the IBS to offer returns to all their demand deposits (current accounts) customers, so long as the return did not exceed that of one-month investment deposits.

In terms of product development, Bank Negara issued two guidelines for two Islamic banking products, namely the Guidelines on Islamic Accepted Bills (March 1993) and the Guidelines on Islamic Negotiable Instruments (December 1998). The Islamic accepted bill (IAB) is the Islamic version of banker's acceptances and was designed to enhance and deepen further the trading activities in the Islamic money market. The Islamic negotiable instruments included two new Islamic deposit-taking products, namely the Negotiable Islamic Debt Certificate (NIDC), based on the concept of *Al-Bai' Bithaman Ajil,* and the Islamic Negotiable Instrument of Deposits (INID), based on the concept of *Al-Mudharabah.*

The products were created to provide an additional avenue for the Islamic bank and banking institutions participating in the IBS to mobilise domestic savings from the public, and at the same time, to deepen the Islamic money market with marketable and liquid instruments. Bank Negara also issued three guidelines to facilitate the provision of Islamic financing: Export Credit Refinancing (ECR), the Special Scheme for Low and Medium Cost Houses (SLMH) and the Fund for Small and Medium Industries (SMI).

4.6.2 The association of Islamic banking institutions in Malaysia

The Association of Islamic Banking Institutions Malaysia (AIBIM) was established in June 1995 with the objective of promoting the establishment of a sound Islamic banking system with best practices in co-operation and consultation with Bank Negara and other regulatory bodies. The AIBIM includes the Islamic banks and IBS banks as

---

[23] Bank Negara replaced the Skim Perbankan Tanpa Faedah (SPTF) with the Islamic Banking Scheme (IBS) beginning 1 December 1998.

its ordinary members, and non-banking financial intermediaries and related organizations involved in Islamic banking and finance as associate members.[24]

4.6.3 The national *Shari'ah* advisory council

One of the requirements that an Islamic bank under the Islamic Banking Act 1983 had to comply with was the establishment of a *Shari'ah* advisory body. For the IBS banks, they are required to appoint at least one *Shari'ah* consultant to assist the banks on any *Shari'ah* operational issues, as stipulated in the Guidelines for the IBS. Bank Negara has also allowed institutions in the same banking group (commercial banks, finance companies, merchant banks, and discount houses) to maintain only a single *Shari'ah* consultant in order to minimise duplication of resources.

The National *Shari'ah* Advisory Council (NSAC) members were appointed by Bank Negara Board of Directors. The National *Shari'ah* Advisory Council members are shown in Table 4.7 as follows:

Table 4.7
The national *Shari'ah* advisory council members

Session	Names of members
Session 1999-2001	Dato' Md Hashim Haji Yahya (Chairman) Dato' Sheikh Ghazali Abdul Rahman Dato' Dr. Abdul Monir Yaacob Dato' Dr. Abdul Halim Ismail Dato' Dr. Hassan Ahmad Dr. Mohd Daud Bakar
Session 1997-1999	Prof. Dato' Dr. Hj. Othman Hj. Ishak (Chairman) Prof. Emeritus Tan Sri Datuk Ahmad Ibrahim Dato' Mohd Hashim Hj. Yahya Dato' Dr. Abdul Halim Ismail Dato' Sheikh Azmi Ahmad Dr. Abdullah Hj. Ibrahim Dr. Ahmed Ali Abdella Dr. Mohd Daud Bakar

Source: Compiled by the author from *Islamic Banking Overview 1997-2000*, www.bnm.gov.my/fin_sys/islamic/index.htm/. (19th October, 2003)

Although the inclusion of *Shari'ah* scholars in Islamic banking operations had its advantages, Bank Negara also noted that there existed some differences of opinion among *Shari'ah* consultants on similar issues, which might impede the creation of a sound and healthy Islamic banking system. To resolve this issue, Bank Negara established the National *Shari'ah* Advisory Council for Islamic Banking and Takaful

---

[24] Ibid., p. 251.

(NSAC) in May 1997 as the highest *Shari'ah* authority on Islamic banking and takaful.[25]

The primary objectives of the National *Shari'ah* Advisory Council are as follows:

(i) To act as the sole authoritative body to advise Bank Negara on Islamic banking and takaful operations;

(ii) To co-ordinate *Shari'ah* issues with respect to Islamic banking and finance (including *takaful*); and

(iii)To analyse and evaluate *Shari'ah* aspects of new products/schemes submitted by the banking institutions and takaful companies.

4.7 ISLAMIC BANKING PRODUCTS AND SERVICES

It may be noted that the principles of Islamic finance depend on two main conceptual characteristics: First, the profit and loss sharing system, which is the basic and foremost characteristic of Islamic financing, instead of the fixed rate of interest (however, in practice in Malaysia this is implemented on the basis of the profit-sharing method). Islam encourages Muslims to invest their money and to become partners in business instead of becoming creditors.

This method of doing business will encourage entrepreneurship. In turn, entrepreneurs will compete with each other to become the agents for the suppliers of financial capital who, in turn, will closely scrutinise projects and management teams. This is because the principles and objectives of Islamic financing are based on the idea that high-risk investment provides a stimulus to the economy and encourages entrepreneurs to maximise their efforts.

Second, the prohibition of contractual ambiguity (*Gharar*)[26] is another significant principle of Islamic financing. Under this prohibition, any transaction entered into should be free from uncertainty or speculation, so that the contracting parties should have a perfect knowledge of the counter values intended to be exchanged as a result of their transactions. The current opinion, options and futures are considered un-Islamic, as are forward exchange transactions, because rates are determined by interest differentials.

---

[25] Bank Negara Malaysia, *National Shari'ah Advisory Council*, 1997-2000, www.bnm.gov.my/fin_sys/islamic/nsac.htm/. (19th October, 2003)

[26] Is an exchange in which there is an element of deception either through ignorance of the goods or the price, or through faulty description of the goods.

Therefore, in general, the main principle of Islamic finance is the prohibition of interest (*Riba* in Arabic).[27] There is consensus among scholars that even the interest paid by and to conventional banks is *Riba*. Islam does not recognise loans as income-generating transactions. They are meant only for those lenders who do not intend to earn a worldly return through them. Instead, they lend their money either on humanitarian grounds to achieve a reward in the Hereafter, or merely to save their money in safer hands. So far as income-generating investment is concerned, there are several other modes of investment, such as partnership, that may be used for that purpose. Loan transactions are not meant for earning income.

4.7.1 The basic philosophy behind Islamic financing

The basic philosophy underlying this scheme is that it must be ascertained whether:

(i) The lender is lending money to the borrower as a sympathetic act, or

(ii) The lender is lending money to the borrower, in order to reaffirm this principle, or

(iii) The lender is advancing his money in order to share in the profits of the borrower.

The list below in Table 4.8 shows the number of products or services and applicable concepts of Islamic financing in the Malaysian dual banking system.[28]

Table 4.8
Islamic banking products and services in Malaysia

Deposit Services	Name of Product/Service
Saving deposit	Wadiah/Mudharabah
Current deposit	Wadiah/Mudharabah
Special investment deposit	Mudharabah
Specific investment deposit	Mudharabah
General investment deposit	Mudharabah
Negotiable Islamic deposit certificate	Bai' Bithaman Ajil
Islamic negotiable instrument of deposit	Mudharabah

---

[27] *Riba* means that something extra is taken in return for nothing (of real value).

[28] Bank Negara Malaysia, *Islamic Banking Concepts*, www.bnm.gov.my/fin_sys/islamic/concepts.htm/. (20th October, 2003)

Table 4.8 (Continued)
Islamic banking products and services in Malaysia

Retail Banking/Consumer Banking	Name of Product/Service
Factoring	Bai' Al-Dayn
Overdraft	Muranahah
Credit card	Bai' Bithaman Ajil
Hire purchase	Ijarah Thumma Al-Bai'
House financing	Bai' Bithaman Ajil/Ijarah Wa Istiqna
Umrah financing	Bai' Bithaman Ajil
Working capital financing	Murabahah
Commercial property financing	Bai' Bithaman Ajil
Share financing/Unit trust financing	Bai' Bithaman Ajil/Mudharabah/Musharakah

Corporate Banking	Namae of Product/Service
Bonds	Bai' Bithaman Ajil/Murabahah
Leasing	Ijarah
Bridging finance	Istisna/Bai' Bithaman Ajil/Musharakah
Project financing	Mudharabah/Musharakah
Commercial papers	Bai' Bithaman Ajil/Musharakah
Revolving financing	Ijarah
Financing syndication	Bai' Bithaman Ajil/Musharakah
Industrial hire purchase	Murabahah
Underwriting, lead arranging/advisory	Ijarah

Treasury/Money market investment products	Name of Product/Service
Foreign exchange	Ujr
Forward rate agreements	Ujr
Sell & buy-back agreements	Murabahah
Government investment issues	Qardhul Hassan
Sanadat (bonds) Mudharabah Cagamas	Mudharabah

Trade Financing	Name of Product/Service
Bank guarantee	Ujr
Letters of credit	Al-Wakalah/Mudharabah/Musharakah
Shipping guarantee	Ujr
Islamic accepted bills	Mudharabah/Bai' Al-Dayn
Export credit financing	Murabahah/Bai' Al-Dayn

Others	Name of Product/Service
Telebanking	Ujr
Demand draft	Ujr
ATM services	Ujr
Cashier's order	Ujr
Travelers cheques	Ujr
TT/Funds transfer	Ujr
Standing instruction	Ujr
Stock broking services	Ujr

Source: Compiled by the author from *Islamic Banking Concepts*, www.bnm.gov.my/fin_sys/islamic/concepts.htm/. (20th October, 2003)

In the first two cases ((i) and (ii)) the lender is not entitled to claim any additional amount over and above the principal, since in case (i) the lender has offered financial assistance to the borrower on humanitarian grounds or other sympathetic considerations.

and in case (ii) the lender's sole purpose is to save his/her money and not to earn any extra income. However, if the lender's intention is to share the profits of the borrower, as in case (iii) the lender shall have to share their loss also, if the borrower suffers a loss. Therefore, in this case, the lender's objective cannot be served by a loan transaction. He will have to undertake a joint venture with the opposite party, whereby both will have a joint stake in the business and will share its outcome on a fair basis.

4.7.2 Islamic financing techniques

Financing modes can be distinguished according to the nature of the financing in different techniques. The modern banking and financial system has come into being to meet human needs for services and financing. Generally, there are two main types of financing, which are equity financing and debt financing. Islamic banking has its own laws in the form of profit-sharing contracts through which the customers (Muslims) can fulfil their needs for equity financing.

In Islamic banking there are two major contracts in equity financing: *Al-Musharakah* (joint-venture profit-sharing) and *Al-Mudarabah* (trustee profit-sharing). Debt financing includes cost-plus transactions known as *Al-Murabahah*, leasing transactions known as *Al-Ijarah* and *Al-Ijarah Wa Iqtina*, deferred payment sale (*Bai Muajjal*), purchase with deferred delivery (*Bai Salam*) and sale on order (*Istisna*). A discussion follows of several important conceptual points regarding the Islamic financing instruments:

(1) *Al-Murabahah* – *Al-Murabahah* was originally an exchange transaction in which a trader purchases items required by an end-user. The trader then sells those items to the end-user at a price that is calculated using an agreed profit margin over the cost incurred by the trader.[29]

However, all *Al-Murabahah* transactions should conform to the principles of Islamic finance governing exchange transactions. Therefore, they must meet the following conditions:

(a) *Al-Murabahah* transactions can be undertaken only where the client of a bank or financial institution wants to purchase a commodity. Therefore, this type of transaction cannot be enacted in cases where the client wants to obtain funds for

---

[29] Bank Negara Malaysia, *Islamic Banking Concepts*, www.bnm.gov.my/index.php?ch=174&pg=467&ac=368/; see also Rodney Wilson, *Islamic Finance*, 1997, p. 10., and Al Rajhi Banking and Investment Corp, *Instruments of Islamic Banking & Finance–Murabaha*, www.alrajhibank.com.sa/instruments-murabaha.htm/. See also Rodney Wilson, Islamic Finance and Ethical Investment, *International Journal of Social Economics*, 1997, pp. 1331-1336.

a purpose other than purchasing a commodity, such as the settlement of bills and any other liabilities.

(b) To make it a valid transaction it is necessary that the commodity is really purchased by the bank and that it comes into the ownership and possession of the bank physically, so that the bank may assume any risk related to the commodity so long as it remains under its ownership and in its possession.

(c) After acquiring the ownership and possession of the commodity, it should be sold to the client through a valid procedure and sale.

(2) *Al-Mudarabah* – This involves a contract between two parties whereby one party, the *rabb-al-mal* (sleeping partner), entrusts money to the other party called the *mudarib* (labour partner). The *mudarib* is to utilise it in an agreed manner and then returns to the *rabb-al-mal* the principal and the pre-agreed share of the profit. He keeps for himself what remains of this profit.[30]

However, the following rules should be followed in all *Al-Mudarabah* transactions:

(1) The division of profits between the two parties must necessarily be on a proportional basis and cannot be a lump sum or guaranteed return.

(2) The investor is not liable for losses beyond the capital he has contributed, and

(3) The *mudarib* does not share in the losses except in terms of the loss of his time and effort.

Generally speaking, an Islamic bank lends money to a client to finance a factory or for capital to begin a business, for example, in return for which the bank will receive a specified percentage of the factory's net profits every year for a designated period. This share of the profits provides for the repayment of the principal and a profit for the bank to pass on to its depositors. If the factory loses money, the bank, its depositors and the borrower all jointly absorb the losses, thereby putting into practice the pivotal Islamic principle that the providers and users of capital should share both the risks and the rewards.

Briefly, Islamic banks in Malaysia use this instrument to finance those seeking investments in order to run their own enterprises or professional units, whether they are physicians, engineers, traders or craftsmen. The bank will provide adequate finance as a capital owner in exchange for a share in the profits to be agreed upon. It is worth noting that this type of Islamic financing represents a high risk for the bank, since the bank delivers capital to the *mudarib,* who undertakes all the work and management of the

---

[30] Ibid., p. 1., see also Rodney Wilson, *Islamic Finance*, 1997, p. 8., and Al Rajhi Banking & Investment Corp, *Instruments of Islamic Banking and Finance–Mudaraba*, www.alrajhibank.com.sa/instruments-mudarabah.htm/. (21st October, 2003)

enterprise, and the *mudarib* shall only be a guarantor in case of negligence or trespass. However, in Malaysia, Islamic banking financing usually takes the precautions necessary to decrease the risk and to guarantee a better outcome for the *Al-Murabahah*, and taking this objective very seriously.

(3) *Al-Musharakah* – This type of Islamic bank financing usually takes the form of a partnership, established in order to carry out a specific project. In other words, this type of financing can be seen as similar to a western-style joint venture, and is also regarded by some as the purest of Islamic financing instruments. It also conforms to the underlying partnership principles of sharing and benefiting from risk.[31]

Participation in a *Al-Musharakah* can either be in a new project, or by providing additional funds for an existing one. The division of profits is agreed upon in advance, and any losses will be shared in proportion to the capital contribution. In this case, the bank enters into a partnership with a client who shares the equity capital and even the management. Both parties share the profits or losses according to their equity shareholding.

There are two types of *Al-Musharakah* that have been implemented in Malaysian Islamic bank financing:

(a) *Sharikah-al-Milk* – partnership based on joint ownership. This may be voluntary e.g. in the purchase of a ship.

(b) *Sharikah-al-uqud* – partnership based on a contractual relationship.

(4) *Al-Ijarah* – In the context of Islamic banking financing, *Al-Ijarah* can be defined as a process in which the use of the infrastructure of a particular property is transferred to another person in exchange for a rent claimed from him/her.[32] In many respects, *Al-Ijarah* resembles leasing as it is practised in today's commercial world. The distinguishing feature of the mode is that the assets remain the property of the Islamic bank, to be put up for rent every time the lease period ends. Under *Al-Ijarah*, the bank or the leasing company assumes the risk of recession or diminishing demand for these assets.

However, to be in consonance with the principles of Islamic finance governing financial transactions every *Al-Ijarah* transaction must meet the following conditions:

---

[31] See also Rodney Wilson, *Islamic Finance*, 1997, pp. 9-10., and Al Rajhi Banking & Investment Corp, *Instruments of Islamic Banking & Finance–Musharaka*, www.alrajhibank.com.sa/instruments-musharaka.htm/. See also Rodney Wilson, Islamic Finance and Ethical Investment, *International Journal of Social Economics*, 1997, pp. 1331-1336.

[32] Ibid., p.1., see also Rodney Wilson, *Islamic Finance*, 1997, p. 12., and Al Rajhi Banking & Investment Corp, *Instruments of Islamic Banking & Finance–Ijara*, www.alrajhibank.com.sa/instruments-ijara.htm/. (22nd October, 2003)

(a) It is a condition that the object leased must not be perishable or consumable. The lease is for the utilisation and not the consumption of the asset. In addition, the subject of the contract must actually and legally be attainable. It is not permissible to lease something that cannot be delivered.

(b) The leaser must not only deliver the asset on time on the date of commencement of the lease, but also ensure that the leaser also delivers those accessories which are essential for the lessee to benefit from the asset as per the norms. In addition, the lease contract must state the lease period clearly. Renewal terms must also be stated clearly, and things like the rental for all subsequent years.

(c) The amount and timing of the lease payments should be agreed in advance. However, the agreed schedule and amount of those payments need not be uniform. In addition, it is permissible for the two parties to agree during the lease period to review the lease period or the rental or both. That is because a lease contract occurs periodically, unlike a sale contract, where the transfer of ownership is immediate. The leaser bears the liabilities when leasing the asset, and the payment of premiums and basic maintenance. There is no objection to authorising the lessees to undertake all the above but the costs thereof must be borne by leaser/owner.

(d) The leaser/owner bears all the costs of the legally binding basic maintenance and these are operations on which the permanence and sustainability of the leased object depend. The leaser also bears the cost of the replacement of the durable parts. However, it is permissible to make the lessee bear the costs of ordinary routine maintenance, because this cost is normally known and can be considered as part of the rental. In addition, the conditions of usage of the leased items must be stated. The leaser must have full possession and legal ownership of the assets prior to leasing them.

(e) A price cannot be predetermined for the sale of the asset at the expiry of the lease. However, leaser and lessee may agree to the continuation of the lease or the sale of the leased asset to the lessee under a new agreement at the end of the initial lease period. In addition, in the event of late payment of rental, the *Al-Ijarah* may be terminated immediately. The leaser may claim compensation for any damage caused to the leased assets as a result of negligence on the part of the lessee.

(5) <u>*Al-Salam*</u> – *Al-Salam* is also one of the basic conditions for the validity of sale in *Shari'ah*: the commodity intended to be sold must be in the physical or constructive possession of the seller.[33] This condition has three implications:

(a) This is an exception to the general rule, which prohibits trading in goods which do not exist at the time of sale.

(b) The seller should have acquired ownership of that commodity. If the commodity exists but the seller does not own it, he cannot sell it to anybody.

(c) Mere ownership is not enough. It should have come into the possession of the seller, either physically or constructively. If a seller owns a commodity, but he has not taken delivery of it himself or through an agent, he cannot sell it.

The *Shari'ah* allows *Al-Salam* subject to certain conditions. The basic purpose of this type of sale is to meet the needs of small farmers who need money to grow their crops and feed their families up to the time of their harvest. After the prohibition of *riba* they were no longer allowed to take out usurious loans. They are therefore allowed to sell their agricultural products in advance. *Al-Salam* is beneficial to the seller, because he receives the money in advance, and it is also beneficial to the buyer, since normally the price in *Al-Salam* is lower than in on the-spot sales.

The permissibility of *Al-Salam* is an exception to the general rule that prohibits forward sales. Therefore, it is subject to some strict conditions. Among the main conditions of *Al-Salam* are:

(i) It is necessary for the validity of *Al-Salam* that the buyer pays the price in full to the seller at the time of effecting the sale. This is necessary because in the absence of full payment by the buyer, it will be tantamount to a sale of debt, which is expressly prohibited. Moreover, the basic wisdom behind the permissibility of *Al-Salam* is to fulfil the instant needs of the seller. If the price is not paid to him in full, the basic purpose of the transaction will be defeated.

(ii) *Al-Salam* can be effected only in those commodities whose quality and quantity can be exactly specified. In other words, those things whose quality or quantity is not determined by the specification cannot be sold through the contract of *Al-Salam*. For example, precious stones, e.g. diamonds, cannot be sold on the basis of *Al-Salam*, since each piece of diamond is normally

---

[33] Ibid., p. 1.; see also Al Rajhi Banking & Investment Corp, *Instruments of Islamic Banking & Finance–Salam*, www.alrajhibank.com.sa/instruments-salam.htm/. (23rd October, 2003)

different from any other, either in its quality or in its size or weight and thus exact specification is not generally possible.

(iii) It is permissible to take out a mortgage and a guarantor on a *Al-Salam* debt, in order to ensure that the seller carries out his obligation by delivering the commodity sold, for which he is liable on the due date. On the other hand, it is not permissible for the buyer of a *Al-Salam* commodity to sell it before receiving it, because that is similar to the prohibited sale of debts before holding. It is known that the *Al-Salam* commodity represents a liability debt to the seller and not an existing commodity.

(6) *Al-Istisna* – The second kind of sale is when a commodity is transacted before it comes into existence. This means that specific products/commodities are ordered to be manufactured for the purchaser. If the manufacturer undertakes to manufacture the goods for him, the transaction of *Al-Istisna* comes into existence. However, it is necessary for the validity of *Al-Istisna* that the price is fixed with the consent of the parties and that necessary specification of the commodity is fully settled between them.[34]

In addition, the contract of *Al-Istisna* imposes a moral obligation on the manufacturer to manufacture the goods, but before he starts the work, either one of the parties may cancel the contract after giving notice to the other. But after the manufacturer has started the work, the contract cannot be cancelled unilaterally. However, the party placing the order has the right to retract the order if the commodity does not conform to the specifications demanded.

The areas in which *Al-Istisna* is the mode of financing are the following:

(a) *Al-Istisna* can be used for providing the facility of financing in certain transactions, especially in the sector of house financing. For example, if the client has his own land and he seeks financing for the construction of a house, the financier may undertake to construct the house on that open land on the basis of *Al-Istisna*. In addition, if the client has no land and he wants to purchase the land also, the financier may undertake to provide him with a constructed house on the specified piece of land.

(b) It is not necessary in *Al-Istisna* that the price be paid in advance, nor is it necessary that it be paid at the time of delivery; rather, it may be deferred to any

---

[34] Bank Islam Malaysia Berhad, *Instruments of Islamic Banking & Finance–Istisna*, www.bankislam.com.my/intsru-istisna.htm/., and also from Al Rajhi Banking & Investment Corp, *Instruments of Islamic Banking &Finance–Istisna*, www.alrajhibank.com.sa/instruments-istisna.htm/. (23rd October, 2003)

time according to the agreement of the parties. The time of payment may be fixed in whatever manner they wish. The payment may also be in instalments. On the other hand, it is not necessary that the financier himself construct the house. He can enter into a parallel contract of *Al-Istisna* with a third party, or may hire the services of a contractor. In both cases, he can calculate his cost and fix the price of *Al-Istisna* with his client in a manner that may give him a reasonable profit over his cost.

(c) The payment of instalments by the client may start in this case right from the day when the contract of *Al-Istisna* is signed by the parties, and may continue during the construction of the house and after it is handed over to the client. In order to secure the payments of instalments, the bank, as security, may keep the title deeds to the house or land, or any other property, until the client pays the last instalment. The bank, in this case, will be responsible for the construction of the house in full conformity with the specifications detailed in the agreement.

(d) The instrument of *Al-Istisna* may also be used for project financing on similar lines. If a client wants to install machinery in his factory, and the machinery needs to be manufactured, the financier may undertake to prepare the machinery through the contract of *Al-Istisna* according to the aforesaid procedure. The same principles will be fully applicable to the construction of a building for the industry.

Differences between *Al-Istisna* and *Al-Salam*:

(1) It is necessary for *Al-Istisna* that the price be paid in advance, while this is not necessary for *Al-Salam*.

(2) The subject of *Al-Istisna* is always a thing that needs to be manufactured, while *Al-Salam* can be used whether it needs to be manufactured or not.

(3) The contract of *Al-Istisna* can be cancelled before the manufacturer starts the work, while the contract of *Al-Salam*, once agreed upon, cannot be cancelled unilaterally.

(4) The time of delivery is an essential part of the sale in *Al-Salam* while it is not necessary in *Al-Istisna* that the time of the delivery be fixed.

(5) The buyer may stipulate in the *Al-Istisna* contract that the commodity shall be made by a manufacturer or produced by a specific manufacturer, or manufactured from specific materials. This is not permitted in the case of a *Al-Salam* sale.

(7) <u>*Bai' Bithaman Ajil*</u> – The *Bai' Bithaman Ajil* is a contract that refers to the sale of goods on a deferred payment basis. Equipment or goods requested by the client are bought by the bank, which subsequently sells the goods to the client at an agreed price (the sale price), which includes the bank mark-up (profit). However, the client may be allowed to settle payments by instalments within a pre-agreed period or in a lumpsum. This type of financing is similar to the *Al-Murabahah* contract in other countries: this is also a credit sale.[35]

The question here is, what are the differences between the Islamic financial system and the conventional system in equity financing and debt financing? In equity financing there are no practical differences. The *Al-Musharakah*[36] contract (joint venture profit-sharing) is in essence similar to the conventional concept of the joint stock company. The financing of a project through equity-participation financing and the formation of an equity unit trust would be generally the same in both Islamic equity financing and conventional equity financing.

The *Al-Mudarabah*[37] contract (trustee profit-sharing) is where the owner of capital provides funds to the entrepreneur to invest and trade in order to generate profit and where both share the profit in pre-agreed proportions. This is actually known in the conventional financial system, and is what venture capital does. However, there is a difference between the Islamic financial system and the conventional financial system in debt financing. Debt financing in the conventional financial system is interest-based, whereas Islamic debt financing instruments are based on deferred contracts of exchange (DCE). The pricing of Islamic instrument still uses KLIBOR (interest index).

4.8 INSTITUTIONAL DEVELOPMENT

Malaysia has succeeded in implementing a dual banking system, and among those countries with a free market economic system, Malaysia has emerged as the first nation to have a fully-fledged Islamic banking system operating side by side with the conventional banking system. This has helped Malaysia to create a comprehensive Islamic financial landscape, encompassing the Islamic banking system, the non-bank Islamic financial intermediaries and the Islamic financial markets.

---

[35] Bank Islam Malaysia Berhad, *Instruments of Islamic Banking & Finance–Bai' Bithaman Ajil*, www.bankislam.com.my/intsru-bai bithaman ajil.htm/. (23rd October, 2003)

[36] This technique involves a partnership between two parties who both provide capital towards the financing of the project. This type of financing is usually the owner of the capital have control right.

[37] This is an agreement made between two parties: one which provides 100 per cent of the capital for the project and another party known as a *mudarib*, who manages the project using his entrepreneurial skills. This type of financing is usually the owner of the capital does not have control right.

The Islamic banking system in Malaysia now consists of two Islamic banks, regulated and supervised under the Islamic Banking Act 1983 (IBA), and 24 commercial banks, 18 finance companies, 5 merchant banks, and 7 discount houses participating in the IBS, and regulated and supervised under the Banking and Financial Institutions Act 1989 (BAFIA). Islamic banking facilities are now available in 120 branches of the Islamic banks, 1,663 branches of the IBS commercial banks, including six fully-fledged Islamic banking branches, 820 finance company branches, including two fully-fledged Islamic banking branches, and nine merchant bank branches. The total assets of the Islamic banking system as at end-June 1999 stood at RM34.1 billion, while deposits and financing amounted to RM26.1 billion and RM11.7 billion respectively.

The aspiration of Bank Negara to develop a comprehensive Islamic banking system has encouraged the non-bank Islamic financial intermediaries to improve their participation in the Islamic banking sector. These ancillary institutions have created their own niche market in Islamic banking and may be broadly divided into four groups of institutions, as follows:

i) The takaful companies;

ii) The savings institutions;

iii) The development financial institutions; and

iv) Other financial intermediaries which offer Islamic banking services such as the housing credit institutions.

Takaful operations have been regulated and supervised by Bank Negara since 1988, with the appointment of Bank Negara Governor as the Director-General of *Takaful*. There are at present two takaful operators, namely Syarikat Takaful Malaysia Berhad (STMB) and Takaful Nasional Sdn. Berhad (TNSB) operating a total of 113 takaful offices throughout the country. For the financial year ending 1999, total assets of the family takaful funds and the general takaful funds amounted to RM607 million and RM227 million respectively.

The most prominent Islamic savings institution is the Pilgrims Fund Board, popularly known as *Tabung Haji*. *Tabung Haji* is considered the first Islamic financial institution in Malaysia, established by statute in August 1969. The aim of *Tabung Haji* is to promote and mobilise the savings of Muslims intending to go on pilgrimage, and to co-ordinate activities connected with Muslims going on pilgrimage. *Tabung Haji* manages a fund derived mainly from the accumulation of savings of intended pilgrims and organises the pilgrimage for Muslims. As at end-June 1999, its assets stood at

RM7.66 billion, while the total number of depositors registered with the Board was 3.6 million with total outstanding deposits of RM6.9 billion.

Bank Rakyat is the leading co-operative credit institution in the country and has established itself as a co-operative bank, operating on the basis of Islamic principles. The principal activities of the bank are those of a co-operative bank, accepting deposits and providing personal, leasing and other financing facilities to its members. The bank introduced Islamic banking in 1993 and has been actively promoting and providing Islamic banking products and services through its 76 branches nationwide. All new branches of *Bank Rakyat* now offer solely Islamic banking products and services while the existing branches are gradually being converted into Islamic banking branches.

Bank Rakyat also pioneered the provision of Islamic pawn-broking services, popularly known as *Ar-Rahnu*, which is a joint-venture programme with *Yayasan Pembangunan Ekonomi Islam Malaysia* (YPEIM). As at end-June 1999, the total assets of the Islamic banking operations of *Bank Rakyat* amounted to RM6.2 billion or 88 percent of its total assets. The National Savings Bank (NSB) offers Islamic banking services on a small scale via the Islamic window. The total Islamic banking assets of NSB as at end-June 1999 amounted to RM138 billion or 2 percent of its total assets.

The development finance institutions (DFIs) which offer Islamic banking services are *Bank Industri* (BI), *Bank Pembangunan dan Infrastruktur Malaysia* (BPIM) and the Agriculture Bank of Malaysia, all of which provide the facilities on a window basis. The BPIM provides Islamic banking facilities in the provision of medium-term and long-term funds to promote industrial investment and growth, while the Agriculture Bank has developed a similar scheme to that of BPIM. In addition, BI and BPIM are also the national recipients of the Islamic Development Bank (IDB) financing facilities in Malaysia, which extends credit lines to both banks for Islamic direct financing and trade financing facilities. As at end-June 1999, the combined Islamic financing extended by the three institutions amounted to RM164 million.

The Treasury Housing Loan Division (THLD) has provided Islamic house financing facilities to civil servants since May 1996, in line with its policy to provide all new house financing to civil servants on an Islamic basis. As at end-June 1999, the total approved Islamic house financing extended to civil servants amounted to RM2.8 billion or 17.3 percent of total financing outstanding.[38]

---

[38] Central Bank of Malaysia, The *Central Bank and the Financial System in Malaysia–A Decade of Change 1989-1999*, Islamic Banking and *Takaful*, 1999, pp. 251-253.

4.8.1 The Islamic Capital Market

The Islamic capital market comprises the primary market, in which new issues of government Islamic securities and the Islamic corporate securities are offered to the public and institutions; and the secondary market, in which existing Islamic government papers and Islamic corporate securities are traded.

In the government securities market, the current instruments available on the market are the Government Investment issues (GIIs) and the Malaysian Savings Bonds – Islamic principle. The GIIs are issued under the Government Investment Act 1983, whereby the government is allowed to issue non-interest bearing government papers to the public on the basis of Islamic principles. The GII is based on the concept of *Al-Qardhul Hassan* (benevolent loan) whereby the purchase of GII by the public is considered a loan to the government for its development expenditure.

Since the GIIs are defined as liquid assets, the Islamic bank and SPI banks purchase the GIIs to meet their liquidity requirements as well as to park their contemporary idle funds. As at end-June 1999, the total outstanding issues of GIIs amounted to RM2 billion. In November 1999, Bank Negara issued the second series of the Malaysian Savings Bonds to retirees, totalling RM2 billion, of which RM1 billion was issues based on the concept of *Bai' Al-Einah* (buy-back arrangement).

The purpose of the bonds is to provide reasonable returns on investment to retirees during this phase of economic recovery while the returns on deposits with the banking system are relatively low. Under the system of Islamic bonds, Bank Negara sells its identified assets to the public through the designated Malaysian banks and repurchases the assets at a mark-up, which gives rise to a debt, evidenced by a registered certificate, which is non-tradable and non-negotiable.

The two major components of the Islamic corporate securities market are the Islamic debt securities market and the Islamic equity market. The Islamic debt securities market (IDS) made its debut in the 1990s, when a multinational company issued the RM125 million *Bai' Bithaman Ajil* facility for a distillation plant. Since then, the IDS has become increasingly popular, with various Islamic concepts such as *Al-Musharakah*, *Al-Ijarah* and *Qardhul Hasan* being applied. Islamic debt securities comprise medium-term Islamic bonds and short-term Islamic commercial papers (Islamic CPs). As at the end of June 1999, the outstanding IDS Islamic CPs (RM2.8 billion) and Khazanah bonds constituted 40.1 per cent of the total outstanding IDS, amounting to RM6.85

billion. The rapid growth of the IDS is reflected in its outstanding market share of 20.4 per cent of total PDS outstanding as at end-June 1999.

The first *Sanadat* (bonds), *Al-Mudharabah Cagamas* (SMC) were issued in May 1993, totalling RM30 million. This amount represented Islamic house financing purchased from the SPI financial institutions. In 1999, the total outstanding Islamic mortage financing purchased by *Cagamas* stood at RM123 million, while SMC issued amounted to RM184 million.

The Islamic equity market is reflected in the presence of Islamic stock broking operations; Islamic indices; Islamic unit trusts; and a list of permissible counters in the KLSE issued by the Securities Commission (SC). At present, there is one Islamic stock broking firm, three conventional stock broking firms offering Islamic stock broking services through Islamic windows, and four licensed fund managers. There are currently two Islamic indices: the RHB Islamic Index introduced in 1994 followed by the KLSE Islamic Index in April 1999.

The KLSE Islamic Index tracks *Shari'ah*-compliant stock in the KLSE, constructed from the list of *Shari'ah*-approved counters issued by the SC based on the deliberation of the *Shari'ah* Advisory Council of the SC. The SC now issues the list of permissible counters in the KLSE three times a year since June 1997 and in 1999, 541, or 73 per cent, of the total counters in the KLSE were approved as permissible counters.

The unit trusts are a group of specialised financial intermediaries in the capital market which offer small investors the opportunity to pool their resources in a diversified portfolio of securities, which are managed and selected by professional portfolio managers. The inception of the Islamic unit trust was in 1993 when *Tabung Ittikal* was introduced by the Arab-Malaysian Unit Trust. The success of the fund paved the way for the introduction of more Islamic unit trusts and as at end-June 1999, there were 13 Islamic unit trusts in the country with a total approved fund size of RM3.55 billion. However, the net asset value of the Islamic unit trusts is still small, totalling RM1.2 billion as at end-June 1999.[39]

4.8.2 Takaful–insurance in Islam

In modern business, one of the ways to reduce the risk of loss due to misfortune is through insurance. The concept of insurance where resources are pooled to help the

---

[39] Economic Planning Unit, *Eighth Malaysia Plan 2001–2005*, National Printing Department, 2001, pp. 408-413.

needy does not contradict *Shari'ah*.[40] The concept is in line with the principles of compensation and shared responsibility among the community.

It is generally accepted by Muslim jurists that the operation of conventional insurance does not conform to the rules and requirements of *Shari'ah*. Conventional insurance involves the elements of deception/ambiguity (*Al-Gharar*) in the contract of insurance, and gambling (*Al-Maisir*), as the consequences of the presence of uncertainty, and interest (*Al-Riba*) in the investment activities of the conventional insurance companies, all of which contravene the rules of *Shari'ah*. *Takaful* is an alternative form of cover a Muslim can avail himself of against the risk of loss due to misfortune.[41]

4.9 CONCLUDING REMARKS

The implementation of Islamic banking in Malaysia both has to incorporate both profit and morality into its objectives. In order to ensure that their operations conform to the *Shari'ah*, banks often need the advice of experienced religious scholars. Therefore, most banks employ a board of Islamic scholars. When confronted with a new problem, the bank should present a solution to the board and seek their approval. The religious board also administers the *zakat*-fund. Most boards have an orthodox approach and try to apply the available Islamic jurisprudence as literally as possible.

During the research for this chapter, the author also come across a numbers of problems in the implementation of Islamic financial services in Malaysia. These may be traced back to the change of Bank Negara from the Skim Perbankan Tanpa Faedah (SPTF) to the Islamic Banking Scheme (IBS) in 1998, as the Islamic banks could not attract sufficient customers or clients during that time. Among the causes of the problems in Islamic banking are: First, Islamic banking is deficient in professional and financial matters, lacking, for example, good governance and professional staff who really know the banking and financial world. Second, profit and loss sharing financing (PLS-financing) is unpopular with both Islamic banks and clients. For the banks, there are too few attractive projects with an acceptable level of risk. Clients, on the other hand, are unwilling to share too much information and profit with the banks. As a result, profit and loss sharing (PLS) financing attracts many high-risk and low-reward/return projects, and uncooperative or even fraudulent entrepreneurs. Third, profit and loss sharing (PLS) is not suitable for short-term financing or for the non-profit sector. Companies often need finance for short-term liquidity. The administrative procedure of

---

[40] This is according to the National *Shari'ah* Advisory Council of Malaysia.
[41] Ibid., pp. 414-418.

profit and loss sharing (PLS) is too lengthy to answer such urgent needs. Furthermore, it is difficult to determine the return on financing liquidity. The same applies to financing the non-profit sector: what is the return on investment in schools, in a new highway or a new Mass Rail Transit (LRT)? Fourth, there is an Islamic financial market in Malaysia but it lacks developed Islamic financial products, institutions and markets. Owing to a lack of suitable financial instruments, Islamic banks still experience difficulties in optimising their risk, return and liquidity.

Furthermore, the network of Islamic banks is still not well-developed and is too small. Finally, the development of the Islamic money and capital market is new in Malaysia; it was only established in 1994 and has still not matured sufficiently to confront the complexity of the current world financial market. This problem also relates to: (1) The creation of a proper institutional framework to serve the specific needs of the Islamic financial industry in Malaysia. This particularly includes the legal framework and supportive policy. (2) Some of the Islamic banks and other financial institutions which also offer Islamic counters are lacking in terms of supervision, transparency and financial responsibility. This enables them to reap the benefits of economic of scale and to minimise costs. In this way, however, they face the greater risk of being less efficient, particularly compared with the conventional banks, (3) Similarly, these banks conduct very few inter-bank transactions, which minimises their ability to make full use of their liquid funds.

Moreover the Islamic financial instrument in Malaysia still faces the challenges of creating an adequate equity and profit-sharing market. In reality, in cases of liquidity shortages, Islamic banks cannot call upon central banks, because they provide interest-based financing. For that reason, therefore, in 1998, Bank Negara changed the act from the Skim Perbankan Tanpa Faedah (SPTF) to the Skim Perbankan Islam (SPI), and implemented a change in the Islamic banks' financing method from a profit and loss sharing system to a profit-sharing concept.

This overall discussion of the Islamic and conventional banking systems of Malaysia in chapters three and four provides a foundation for the development of the Islamic and conventional deposits econometric model in chapter five.

CHAPTER FIVE

AN ECONOMETRIC MODEL OF THE ISLAMIC AND CONVENTIONAL BANK DEPOSITS IN MALAYSIA

5.1 INTRODUCTION

In this chapter, the discussion will be focused on the following two main topics: first, the study of the development of an econometric model of previous money demand, and secondly, a discussion of the development of the econometric model specification for Islamic and conventional bank deposits in Malaysia. We shall begin with a review of the relevant literature.

5.2 A REVIEW OF PREVIOUS RESEARCH LITERATURE

Since the establishment of the Islamic banking system, a considerable amount of theoretical literature has been published in order to develop an Islamic monetary and banking system (Khan, W. M., 1985;[1] Haron, S., 1995).[2] But only a few empirical studies have been made which include the modeling of monetary stability under an Islamic financial system (Khan, Ashfaque H., 1980 & 1982;[3] Ahmad, M., & Khan, Ashfaque. H., 1990;[4] Yousafi. M., & K. Mccormick., 1997).[5] All these studies have attempted to prove that Islamic monetary instruments are as stable as interest-based instruments. Darrat, A. F, (1988) in the case of Tunisia, also developed a model for checking monetary stability under an Islamic banking system.[6] As Tunisia has no

---

[1] Khan, W. M, *Towards an Interest-Free Islamic Economic System*, The Islamic Foundation, Leicester: UK, 1985.

[2] Haron, S, The Framework and Concept of Islamic Interest-Free Banking, *Journal of Asian Business*, Vol. 11, Issue 1, 1995, pp. 26-39.

[3] Khan, Ashfaque H, The Demand for Money in Pakistan: Some Further Results, *Pakistan Development Review*, Vol. 19, Spring 1980, pp. 25-50. , Khan, Ashfaque H, Adjustment Mechanism and the Money Demand Function in Pakistan, *Pakistan Economic and Social Review*, Vol. 20, Summer 1982a, pp. 36-51., and Khan, Ashfaque H, The Demand for Money and the Variability of the Rate of Inflation: An Empirical Note, *Economic Letters*, Vol. 10, No. 3-4, 1982b, pp. 257-261.

[4] Mushtaq Ahmad, & Ashfaque H. Khan, A Reexamination of the Stability of the Demand for Money in Pakistan, *Journal of Macroeconomics*, Vol. 12, No. 2, Spring 1990, pp. 307-321.

[5] Yousafi. M., & K. Mccormick, Monetary Stability and Interest-Free Banking: A Case of Iran, *Applied Economics*, Vol. 29, 1997, pp. 869-876.

[6] Darrat, A. F, *The Islamic Interest-free Banking System: Some Empirical Evidence*, *Applied Economics*, Vol. 20, 1988, pp. 417-425.

history of Islamic banking, the validity of his study is questionable,[7] however, M. K. Hassan (1996) studied the behaviour of the demand for money in 15 Islamic countries.[8] In this study, he concluded that the interest-free money demand deposit is more stable than the interest-bearing deposits. Ahmad Kaleem (2000) developed and modelled monetary stability under a dual banking system in Malaysia.[9]

However, to date, no empirical study has been made to analyse the relative stability of the Islamic and conventional bank deposits in Malaysia. Previous studies have attempted to provide proof of the relative stability of the banking systems, but this could not be determined by a comparison between the performance of M1 and M2 definitions of money supply. M1 is the currency in circulation plus demand deposits, whereas, M2 is the sum of M1 and narrow quasi-money.

The model specification in this study follows the model used by Darrat, A. F., (1988) and M. K. Hassan (1996). They study the behaviour of the demand for money in Tunisia and that in 15 other Islamic countries. As mentioned above, Hassan concluded that interest-free money [MNI (M1)] is more stable than interest-bearing money [MI (M2)]. In addition, according to Darrat, interest-free money (MNI) is stable; however, interest-based money is not (MI).

This model has been chosen because the characteristic of the model corresponds with the situation of the conventional and Islamic bank deposits in Malaysia. Moreover, this model matches the objectives of this study, and hence allows for the testing of the hypotheses. Some modification has been made, however, so as to allow for and to conform to the Malaysian economic situation.

5.2.1 The econometric model of M. K. HASSAN

The econometric model of M. K. Hassan (1996) for the 15 Islamic countries was a development of the initial model produced by Darrat (1988). In Hassan's study, the countries were divided into four subgroups based on social, political and economic similarities. Within group one are Arabian Gulf countries, including Bahrain, Kuwait, Saudi Arabia, and the United Arab Emirates. Group two contains the Asian countries of Indonesia, Malaysia, and Pakistan. Group three consists of African countries, including

---

[7] M. K. Hassan, *Stability of Money Demand under Interest-free versus Interest-based Banking System*, University of New Orleans, New Orleans: USA, 1996, pp. 1-2.
[8] Ibid., pp. 1-15.
[9] Ahmad Kaleem, Modelling Monetary Stability under Dual Banking System: The Case of Malaysia, in *International Journal of Islamic Financial Services*, Vol. 2, No. 1, April-June 2000, pp. 3-11.

Algeria, Egypt, Morocco, and Tunisia, and in group four are Iran, Jordan, Syria, and Turkey.

Hassan developed his model in the log-linear form using the annual data from the International Financial Statistics for the period 1970-1989 (inclusive). Both the ordinary least square (OLS) and pooled time series analyses were performed on the data to test the hypothesis.

The following notations were used by Hassan in explaining their models:

MNI = Money that earns no interest

MNI = currency + demand deposits

MI = Money that earns interest, time deposits are used as a representative of this variable

CPI, P = Consumer price index

CPIRATE = Growth rate of the CPI

MB = Monetary base

MB = currency + reserve

VMNI = Velocity of MNI

VMI = Velocity of MI

GDP = Gross domestic product

GDPRL = Real GDP

P_t^e = Expected inflation at time t.

Hassan used three regression analyses on both the whole sample and the subsamples to analyse the following hypotheses.[10]

Hypothesis I: The demand for interest-free money (MNI) is more stable compared to that for interest-bearing money (MI). Hassan used the following structure model for the money demand:

1. The behavioural equation for the money demand
   a. The behavioural equation for demand for interest-free money (MNI).

[10] Ibid., pp. 4-7.

$$\text{Log } (MNI/P)_t = a_0 + a_1 \log (GDP)_t + a_2 P_t^e + a_3 \log (MNI/P)_{t-1} + e_t \qquad (5.1)$$

b. The behavioural equation for demand that is interest-based money (MI).

$$\text{Log } (MI/P)_t = b_0 + b_1 \log (GDP)_t + b_2 P_t^e + b_3 \log (MI/P)_{t-1} + U_t \qquad (5.2)$$

Hypothesis II: The correlation between interest-free money (MNI) and the monetary base demand function is stronger than that between interest-bearing money (MI) and monetary base.

2. The link between the two monetary aggregates MNI and MI and the monetary base. The structure models developed by Hassan are as follows:

a. The equation of interest-free monetary aggregate and monetary base.

$$MNI_t = a_1 + a_2 MB_t + e_{1t} \qquad (5.3)$$

b. The equation of interest-bearing monetary aggregate and monetary base.

$$MI_t = b_1 + b_2 MB_t + e_{2t} \qquad (5.4)$$

Hypothesis III: The velocity of interest-free money (VMNI) is more stable than the velocity of interest-bearing money (VMI). The structure model developed by Hassan is as follows:

3. In his study to determine the stability of money velocity under MNI and MI, the Fisher equation of exchange was used as follows:

$$M * V = Y \qquad (5.5)$$

Where;

MNI_t = Money that earns no interest at time t

MI_t = Money that earns interest at time t

CPI_t and P_t = Consumer price index at time t

$CPIRATE_t$ = Growth rate of CPI at time t

MB_t = Monetary base at time t

$VMNI_t$ = Velocity of demand for interest-free money at time t

VMI_t = Velocity of demand for interest-bearing money at time t

GDP_t = Gross domestic product at time t

$GDPRL_t$ = Real growth of gross domestic product at time t

P_t^e = Expected inflation at time t

U_t and e_t = Error term at time t

Hassan's model is discussed comprehensively below:

Hypothesis 1: Whether the demand for interest-free money is more stable than that for interest-bearing money.

In order to test the hypothesis that money with no interest is more stable than money with interest, the stability of the money demand function will be tested with the aid of a Chow test. Since velocity is defined by the Fisher equation as (V = Y/M), and it is the inverse of the demand for money, then one can test the demand for money as a proxy for the stability of the velocity.

Like any other demand function, the typical money demand function contains real income to represent a budget constraint, and returns to one or more alternative assets to reflect the opportunity cost of holding money. The money demand function can be defined as:

$$(M/P) = (GDP_t, P_t^e), \qquad (5.6)$$

where M is the nominal money defined earlier as MNI and MI, P is the general price level, P_t^e is the expected growth rate of inflation at time t and GDP_t is gross domestic product at time t.

It has now been generally accepted that for developed countries, permanent income is an appropriate scale variable, while in the developing countries this argument remains inconclusive. Many authors (such as G. S. Laumas and P. S. Laumas, 1976;[11] Mohsin. S. Khan, 1980;[12] M. K. Hassan, 1992)[13] have found that permanent income and measured income are close substitutes in developing countries.[14]

A number of authors (such as C. Wong, 1977;[15] A. F. Darrat, 1996; M. K. Hassan, 1992) argue that because money markets are relatively thin and controlled in developing

---

[11] Laumas, G. S., & P. S. Laumas, The Permanent Income Hypothesis in an Underdeveloped Economy, *Journal of Development Economics*, 1976, Vol. 3, No.3, September, 1976, pp. 289-297.

[12] Khan, Mohsin S, Islamic Interest-free Banking: A Theoretical Analysis, *International Monetary Fund*, Staff papers, Vol. 33, March 1986, pp. 1-27.

[13] Hassan, M. Kabir, An econometric analysis of credit constraint, foreign interest rates and currency depreciation in the demand for money in Bangladesh, *The Bangladesh Development Studies*, Vol. 20, No. 4, December 1992, 1992, pp. 15-29.

[14] Ibid., p. 6.

[15] Wong, C, Demand for Money in Developing Countries: Some Theoretical and Empirical Results, *Journal of Monetary Economics*, January 1977, pp. 59-86.

countries, the interest rate does not represent the true opportunity cost of holding money. In most developing countries, the choices of asset holders are usually between money and goods, and not between money and financial assets. Generally, individuals in these economies, due to a lack of alternative financial assets, are limited to investing in bank deposits and bank bonds on which interest rates are set by monetary authorities. Changes in these administered rates are made infrequently by the authorities, and therefore show little or no variation over time.

Applying the logarithmic transformation to the above equation yields the following equation:

$$\text{Log } (M/P)_t = a_0 + a_1 \log (GDP_t) + a_2 \log P_t^{\,e} \qquad (5.7)$$

Assuming static expectation, one can use this period growth rate of the CPI as a proxy for the next period of inflation. Since real money demand is not observable, a partial adjustment procedure is used to find a proxy for the unobservable demand for real money. The partial adjustment procedure in the above equation can include a lag dependent variable as an additional explanatory variable:

$$\text{Log } (M/P)_t = a_0 + a_1 \log (GDP_t) + a_2 \log P_t^{\,e} + a_3 \log (M/P)_{t-1} + U_t, \qquad (5.8)$$

where U_t is an error term.

Hypothesis II: Whether the correlation between interest-free money (MNI) and the monetary base (MB) demand function is stronger than that between interest-bearing money (MI) and the monetary base demand function.

One aim of this study is to determine whether the interest-free, or the interest-bearing money supply is superior and more effective in the formulation of monetary policy. As stated by Batten, D. S and D. L.Thornton, (1983) any monetary aggregate becomes useful for the objective only if it satisfies two criteria.[16] First, the monetary aggregate has to be under the full and direct control of the central monetary authority, and second, there should be a strong and reliable link between the monetary aggregate and the main goals of the monetary authority. If the first requirement is satisfied, but there is no link between the monetary aggregate and the macroeconomic variables, then the effectiveness of these aggregates ceases to exist. In order to test the link between the

---

[16] Batten, D.S and D.L.Thornton, M1 or M2: Which is the Better Monetary Target?, *Federal Reserve Bank of St Louis Review*, Vol. 65, 1983, pp. 36-42.

monetary aggregate that earns no interest and money that earns interest and the monetary base, the following equations were estimated:

$$1)\quad MNI_t = a_1 + a_2\, MB_t + e_{1t} \qquad (5.9)$$

$$2)\quad MI_t = b_1 + b_2\, MB_t + e_{2t} \qquad (5.10)$$

A stronger relationship between interest-free money and monetary base or interest-bearing-based money and monetary base will allow monetary authorities to have a more direct control over the money supply, which in turn will have an impact on other macroeconomic variables.

Hypothesis III: Whether the velocity of interest-free money (VMNI) is more stable than the velocity of interest-bearing money (VMI).

To be useful as a policy target, the demand for money must be a stable function of a relatively small number of variables and the central bank must be able to control monetary growth. This analysis is to be used to determine the stability of money velocity with both money that earns no interest and money that earns interest.

Hassan used the Fisher equation of exchange as follows:

$$M * V = Y\ , \qquad (5.11)$$

where M is the money under consideration, V is the velocity of the money, and Y is the nominal gross domestic product. The variance of this velocity will indicate the stability of the demand for this type of money. In many countries, the objective of governments is to have a stable high nominal income without increasing or spiraling inflation. As we know, if a country has a stable velocity of money, the monetary authority can use the money supply effectively to control economic activities, and hence the growth rate of gross domestic product. Laidler argued that the government wants to know about the demand function of money so that it can make predictions about the effect of changes in the money supply on variables such as interest rates, real income, and prices.[17]

Stability in the value of money is considered to be an indispensable goal of the monetary policy of an Islamic country. Inflation implies that money is unable to serve as a just and honest unit of account. It also makes money an inequitable standard of

---

[17] Laidler, D, *The Demand for Money: Theories, Evidence and Problems*, Harper Collins, 4th Edition, New York: USA, 1993, p. 187.

deferred payments, and an untrustworthy store of value. By eroding the purchasing power of consumer money, it impairs the efficiency of the monetary system and imposes a welfare cost on society. It will raise consumption and reduce the value of savings. Inflation also increases the climate of uncertainty in which economic decisions are taken, discourages capital formation and leads to a misallocation of resources.

Inflation also tends to pervert values, rewarding speculation (discouraged in Islam) at the expense of productive activity (idealised in Islam) and intensifying inequalities of income. Therefore, if the interest-free money demand is stable, it is easier for the Islamic monetary authorities to expand the money supply commensurate with the long-term growth of the economy.[18]

5.2.2 The modification of the model

The purpose of this study is empirically to analyse and develop a structural model for the Islamic and conventional banks deposits in Malaysia. Therefore, a general econometric money demand model will be used to analyse the main factors influencing Islamic banks deposits and conventional deposits, and also to test empirically whether the profit-sharing deposits are more stable than the interest-bearing deposits. In order to accomplish this, this study will use the 1983-2001 time series data for Malaysian banks, and will employ ordinary least square (OLS) types of econometric techniques. In order to provide further support for this study the structural stability of both profit-sharing deposits and interest-bearing deposits is tested.

In order to investigate the viability of using the Islamic and conventional banks deposits for effective policy, the strength of the relationship between profit-sharing deposits and monetary base, and between interest-bearing deposits and monetary base are investigated. This study will also use the Chow test to test the stability of deposits in Islamic banks compared with conventional deposits in Malaysia.

As discussed above (see 5.2.1), some modifications have been made to the model of M. K. Hassan (1996) and these are as follows:

5.2.2.1 The equation of the profit-sharing (interest-free) money deposits will include the consumer price index, the profit-share from demand deposits (*Al-Wadiah*) and time deposits (*Al-Wadiah*), and the profit-share from investment accounts (*Al-Mudharabah*). These variables were not included in the original model (equation).

---

[18] Ibid., pp. 5-8.

5.2.2.2 The equation of the interest-bearing money deposits will include the consumer price index, and the interest rates from demand and time deposits.

5.3 THE MONEY DEMAND MODEL IN MALAYSIA

5.3.1 General research framework

The demand for money is represented by the quantity of monetary assets, such as cash and checking accounts, which people choose to hold in their portfolios. Choosing how much money to demand is thus a part of the broader portfolio allocation decision. In general, the demand for money, like the demand for any other asset, will depend on the expected return, risk, and liquidity of money and of other assets.[19] In practice, two features of money are particularly important. First, money is the most liquid asset, and this is the primary benefit of holding money. Second, money pays a low return; indeed currency pays a zero nominal return. The low return earned by money relative to other assets is the major cost of holding money. Actually, people's demand for money is determined by how they trade off their need for liquidity against the cost of a lower return.

In macroeconomics studies, the main variables that have the greatest effects on money demand are the price level, real income, and interest rates. This means that higher prices or incomes increase people's need for liquidity and thus raise the demand for money. Interest rates affect the money demand through the expected return channel. The higher the interest rate on money, the more money people will demand; however, the higher the interest rate paid on alternative assets to money, the more people will want to switch from money to those alternative assets. The higher the general level of prices, the more cash people need to conduct transactions and thus the more cash people will want to hold. Therefore, we can say that the nominal demand for money is proportional to the price level.

The other important factor determining the number of transactions is real income. In other words, the more transactions individuals or businesses make the more liquidity they need and the greater is their demand for money. However, an increase in money demand need not be proportional to an increase in real income. Actually, a 1 per cent increase in real income usually leads to a less than 1 per cent increase in money demand.

---

[19] Abel, Andrew B. & Bernanke, Ben S, *Macroeconomics*, 2nd Edition, Addison-Wesley Publishing Company, New York: USA, 1995, pp. 227-229.

We can find several reasons why the increase in money demand need not be proportional to an increase in real income. First, the money demand grows more slowly than income, and higher-income individuals and firms typically use their money more efficiently. For example, a high-income individual may open a special cash management account in which money is not needed for current transactions but is automatically invested in non-monetary assets paying a higher return.

Second, the nation's financial sophistication tends to increase as national income grows. For example, in poor countries, people may hold much of their savings in the form of money, for lack of anything better; in richer countries people have many attractive alternatives to money. Money substitutes such as credit cards become more common as a country becomes richer, again leading to aggregate money demand's growing more slowly than income.

The theory of portfolio implies that, with risk and liquidity held constant, the demand for money depends on the expected returns of both money and alternative, non-monetary assets. Here two different things can be observed: first, an increase in the expected return on money will increase the demand for money, and secondly, an increase in the expected return on alternative assets causes holders of wealth to switch from money to higher-return alternatives, thus lowering the demand for money.

Thus, from the above discussion we can develop the money demand function as below:

In this equation, we express the effects of the price level, real income, and interest rates on money as:

$$M^d = PL\ (Y, i), \qquad (5.12)$$

where

M^d = the aggregate demand for money, in nominal terms;

P = the price level;

Y = real income or output;

i = the nominal interest rates earned by alternative, non-monetary assets;

L = a function relating money demand to real income and the nominal interest rate.

Equation (5.12) holds that the nominal money demand M^d is proportional to the price level P. Hence, if the price level P doubles (and real income and interest rates do not change), the nominal money demand M^d will also double. Equation (5.12) also indicates that, for any price level P, the money demand depends (through the function L) on real income Y and the nominal interest rate on non-monetary assets i. Therefore, an

increase in real income Y raises the demand for liquidity and thus increases money demand. An increase in the nominal interest rate i makes non-monetary assets more attractive, which reduces money demand.

We could have included the nominal interest rate on money, i^m, in Equation (5.12), because an increase in the interest rate on money makes people more willing to hold money, and thus increases money demand. However, the nominal interest rate on money has varied much less than the nominal interest rate on non-monetary assets, for example, currency and a portion of checking accounts have always paid zero interest, and thus has been ignored by many statistical studies, as in equation (5.12). Thus for simplicity we do not include i^m in the equation.

In other words, the demand for money expresses the nominal interest rate, i, in terms of the expected real interest rate and the expected rate of inflation. The real interest rate on an asset is the rate at which the real value or purchasing power of the asset increases over time. To distinguish them from real interest rates, we refer to conventionally measured interest rates as nominal interest rates. The nominal interest rate tells us the rate at which the nominal value of an asset increases over time. We use i as the symbol for the nominal interest rate.

We can derive the real interest rate related to the nominal interest rate and the inflation rate as:

Real interest rate = nominal interest rate – inflation rate

$$r \approx i - \rho \qquad (5.13)$$

From equation (5.13), we can develop and derive the expected real interest rate. What is really happening in the real world, when we borrow, lend, or make a bank deposit, is that the nominal interest rate is specified in advance, but what about the real interest rate? Equation (5.13) states that the real interest rate depends on the nominal interest rate minus the rate of inflation. However, the rate of inflation during the year generally cannot be determined until the year is over.

Thus at the time that a loan or deposit is made, the real interest rate that will be received is uncertain. As the borrowers, lenders, or depositors do not know what the actual real interest rate will be, they must make their decisions on how much to borrow, lend, or deposit on the basis of the real interest rate they expect to prevail. Should they know the nominal interest rate in advance, the real interest rate they expect depends on what they think inflation will be. Therefore, we can derive the expected real interest rate as follows:

Expected real interest rate = nominal interest rate - expected rate of inflation

$$r^e \approx i - \rho^e , \qquad (5.14)$$

where

r^e = the expected real interest rate;

ρ^e = the expected rate of inflation.

Therefore from equation (5.14), we can deduce that the nominal interest rate (i) equals the expected real interest rate (r^e) plus the expected rate of inflation (ρ^e). Substituting $r^e + \rho^e$ for i in equation (5.12) yields

$$M^d = PL\,(Y, r^e + \rho^e) \qquad (5.15)$$

Equation (5.15) shows that, for any expected rate of inflation ρ^e, an increase in the real interest rate increases the nominal interest rate and reduces the demand for money. Nominal money demand M^d measures the demand for money in terms of money (pounds or dollars). However, measuring money demand in real terms is more usual or convenient. If we divide both sides of equation (5.15) by the price level P, we get

$$\frac{M^d}{P} = L\,(Y, r^e + \rho^e), \qquad (5.16)$$

where

M^d/P = the real money demand;

Y = real income or output;

r^e = the sum of the real interest;

ρ^e = the expected rate of inflation; and

L = the money demand function.

In the Malaysian banking system, Islamic banking performs the same function of financial intermediation as do conventional banks. For example, it attracts financial resources from the public and from institutions, and in many cases directs them towards business firms, which the bank needs as external finance to support their economic activities. However, these activities, instead of interest, rely on profit-sharing, and other interest-free modules.

Apart from this, Islamic banks are also not allowed to issue securities involving interest, like short-term and long-term bonds, debentures, and preference shares.

Currently, Islamic banks, on the liability side of their balance sheets, are based on four main sources of funds. These include demand deposits (current accounts), savings deposits (savings accounts), investment deposits (investment accounts), and shareholders' funds. These four main sources of funding are discussed in details bellow:

i) Demand deposits (current accounts)

In this case, the depositors have the full right to withdraw their funds at any time without prior notice. Usually low rewards are paid on this type of deposit (account) in Malaysia (see chapter four, p. 111). In some countries, however, for example in Pakistan, banks do charge for the costs such as stamp duty, cheque book issuance charges etc, incurred in maintaining these accounts. Actually, this type of deposit (account) performs similar functions to those performed by any conventional bank account in Malaysia, including in many Islamic countries.

ii) Savings deposits (savings account)

Here the rewards or returns are entirely at the bank's discretion, based on the percentage of profit announced by the bank at the end of the year. This type of deposit is for those who want to save money and earn some income at the same time.

iii) Investment deposits (investment account)

This is the third category, which is equivalent to the fixed deposits (account) of conventional banks. However, the difference lies in the fact that these accounts are considered neither as liabilities nor equity funds, but as financial instruments. Here the banks invest their client's money, with their consent, in different profitable projects. Later on, the profit-share is distributed between the bank and its customers at a pre-agreed ratio. Investment deposits (investment account) are redeemable only at maturity but not before that, without the permission of the bank (see chapter four, p. 114).

iv) Shareholders' fund

This is the only mechanism for raising equity in Islamic banking, by offering common shares to the general public. Islamic banks are not allowed to issue preference

shares, as this involves a fixed dividend (interest), which is prohibited by the *Shari'ah* (Islamic law) scholars.

On the asset side of the balance sheet, Islamic banks have so far focused principally on three financial instruments, as follows:

i) *Al-Mudharabah* (profit-sharing)

This type of asset is basically an agreement between two parties, where the investor gives money to the entrepreneur for investment on a mutually agreed project. After the completion of the project, the entrepreneur returns to the investor the principal plus a predetermined share of the profits. In the case of a loss, if this is beyond the control of the entrepreneur, the loss will be covered solely by the investor or banks (who provide the capital).

ii) *Al-Murabahah* (cost-plus financing)

This is the debt base sale agreement between two parties, in which goods are sold at a cost-plus profit margin agreed between customers and the banks at the time of contract. *Al-Murabahah* is the most commonly used type of financing among Islamic banks. However, many scholars have criticised this type of financing on the grounds that it allows interest in through the back door.[20]

iii) *Al-Musharakah* (joint venture)

This is a partnership on a joint venture basis between two parties engaged in some specific type of business. In this type of asset, both parties share the capital, while the investor (bank) can also participate in the management of the business. Later, the profit is divided at a pre-agreed ratio, which may not necessarily depend on the capital-sharing ratio between the two parties.

5.3.2 The model specification

The econometric model which is developed in this study contains five behavioural equations and three identities. The main objectives of the model specification are to see

[20] Metwally, M. M., Differences between the Financial Characteristics of Interest-free Banks and Conventional Banks, *European Business Review*, Vol. 97, No. 2, 1997, pp. 92-96.

what are the real factors that influence the Islamic and conventional banks deposits in Malaysia, and besides that, to compare and attempt to assess whether the profit-sharing deposits are more stable than the interest-bearing deposits, whether the correlation between profit-sharing deposits and the monetary base (MB) demand function is stronger than that between interest-bearing deposits and monetary base (MB) demand function, and whether the velocity of profit-sharing deposits is more stable than that of interest-bearing deposits.

In this model, deposits will be divided into two categories. These will be called the conventional deposits model and the Islamic banks deposits model. The conventional deposits model contains two behavioural equations; the equation for conventional demand deposits (DDC_t), which are demand deposits of money that earns interest, and the equation for conventional time deposits (TDC_t), which are time deposits of money that earns interest. The Islamic banks deposits model, on the other hand, contains three behavioural equations which relate to Islamic demand deposits (DDI_t) and Islamic time deposits (TDI_t) as deposits that earn profit-shares (rate of return to depositors), and Islamic investment deposits (IID_t), which earn a profit-share.

5.3.3 The money demand model

Like any other demand function, the typical money demand function contains real income to represent a budget constraint, existing inflation and the interest rates of the economy. The money demand function may be defined as:

$$M_t / P_t = L\,(GDP_t\,,\, R_t\,,\, P^e_t\,), \qquad (5.17)$$

where

M_t = the nominal money at time t,

P_t = the general price level at time t,

L = a function relating money demand to real income, the nominal interest rate, and the nominal interest rate on money,

R_t = the nominal interest rate on money at time t,

GDP_t = the gross domestic product at time t,

P^e_t = the expected growth rate of inflation at time t.[21]

---

[21] Andrew B. Abel & Ben S. Bernanke, *Macroeconomics*, 2nd Edition, Addison-Wesley Publishing Company, New York: USA, 1995, pp. 229-231.

The demand for money has been studied extensively. Most of the empirical studies have been concentrated on developed countries such as the United States and the United Kingdom. A sample of this type of study includes Friedman, M., 1959;[22] Chow, G. C., 1966;[23] Goldfeld, S.M., 1973;[24] Laidler, D., 1985;[25] Henry, D.F., and Ericsson, N.R., 1991;[26] and Friedman, B. M., and Kuttner, K. N., 1992.[27]

In the post-1973 period, apart from methodological issues, the main phenomenon investigated has been the stability of the demand for M1 or M2. Stability in the demand for a particular monetary aggregate implies the existence of a long-term relationship between money demand and the determinants of money demand. In such a case, that particular monetary aggregate can be relied upon as a guide in the formulation and implementation of monetary policy.

For the United States, the majority of the studies conclude that there is no stable M1 demand function, but the existence of a stable M2 demand function is supported by the data (Butkiewicz, J. L., and McConnell, M. M., 1995).[28] The most often-cited explanations for the instability of M1 demand include changes resulting from deregulation and financial innovation, and uncertainty due to increased volatility of monetary policy.

The money demand in developing countries has also received some attention, especially in India. Bhattarcharya, R. (1995), reviewing the existing voluminous research on money demand in India, reports that the issues have centred around the appropriate measure for money, the choice of a satisfactory scale, the opportunity-cost measures of holding money and the appropriate functional form.[29] Much of the work was done before it became customary to test for unit root and cointegration and to employ the error-correction model. Metwally and Abdel Rahman (1990) estimated

---

[22] Friedman, M, The demand for Money: some theoretical and empirical results, *Journal of Political Economy*, Vol. 67, Issue 4, August 1959, pp. 327-351.
[23] Chow, G. C, On the long-run and short-run demand for money, *Journal of Political Economy*, Vol. 74, Issue 2, April 1966, pp. 111-131.
[24] Goldfeld, S.M, *et al.*, The demand for money revisited, *Brookings Papers on Economic Activity*, Vol. 1973, No. 3 (1973), pp. 577-646.
[25] Laidler, D, *The Demand for Money*, 3rd Edition, Harper and Row, 1985, New York: United States of America.
[26] Hendry, D.F, and N.R. Ericsson, An econometric analysis of UK money demand, in M. Friedman and A.J. Schwartz, Edited., Monetary Trends in the United States and United Kingdom, *American Economic Review*, Vol. 81, Issue 1, 1991, pp. 8-38.
[27] Friedman, B. M. and K. N. Kuttner, Money, income, prices and interest rates, *The American Economic Review*, Vol. 82, Issue 3, 1992, pp. 472-492.
[28] Butkiewicz, J. L, and M. M. McConnel, The stability of the demand for money and M1 velocity: evidence from the sectoral sector, *Quarterly Review of Economics and Finance*, Vol. 35, No. 3, 1995, pp. 233-243.
[29] Bhattarcharya, R, Cointegrating relationships in the demand for money in India, *Indian Economic Journal*, Vol. 43, No. 1, 1995, pp. 69-75.

short-term and long-term elasticities for narrow money and broad money in Saudi Arabia using the partial-adjustment mechanism to formulate the dynamic short-run models.[30]

5.4 THE SUGGESTION OF AN ECONOMETRIC MODEL FOR CONVENTIONAL AND ISLAMIC BANKS DEPOSITS IN MALAYSIA

5.4.1 Introduction

The determination of the form of the model in every economic relationship is very important for every research study, in term of fulfilling the main characteristics of the model.

5.4.2 The development of the model (the model construction)

5.4.2.1 Conventional deposits model

5.4.2.1.1 Development of the function of the conventional demand deposits that earns interest (DDC_t)

DDC_t is the demand deposit (current accounts) of money that earns interest and is defined as the money in Malaysian banking institutions. From the above discussion and from the analysis of the model of M. K. Hassan (1996), we are now able to discuss some important factors which will influence the demand deposits of money that earns interest (DDC_t). Amongst these factors are;

a) <u>The real gross domestic product ($GDRL_t$)</u>

Ceteris paribus, according to this theory, an increase in real income (GDP_t) raises the demand for liquidity and thus increases the demand deposit of money. In other words, higher real income implies that people have spare income to deposit and thus there will be a greater demand deposit in terms of liquidity. From the above explanation, we can say that the relationship between real income and demand deposits of money is in a positive direction.

---

[30] Obben James, The demand for money in Brunei, *Asian Economic Journal*, University of Brunei Darussalam, Brunei, Vol. 17, No. 2, 1998, pp. 109-110.

b) The nominal interest rate on money (RD_t)

An increase in the nominal interest rate makes people more willing to deposit their money, which will increase their demand deposits in the banking institutions. In other words, a higher return on money makes people more willing to deposit their money in the banks. Therefore, we can say that the relationship between the nominal interest rate on money and the demand deposits of money is positive.

c) The consumer price index (CPI_t)

Ceteris paribus, an increase in the consumer price index will mean that people will need more money for transactions. In other words, we can say that an increase in the consumer price index will increase the numbers of dollars needed for transactions. Therefore, the expected signs for the relationship between the consumer price index and the conventional demand deposits of money are negative.

d) The conventional demand deposits of money lagged for one year (DDC_{t-1})

Usually, because increases or decreases in demand deposits at present depend on the trend of the previous period, a partial adjustment procedure is used to find a proxy for the trend of the previous period or unobservable demand deposits of money. The partial adjustment procedure in the equation will include a lagged dependent variable as an additional explanatory variable. This procedure assumes that the adjustment of actual money holdings (deposits) to the desired level is only a fraction of the gap between the desired level in the current period (*t*) and the actual level in the previous period (*t-1*).[31] In addition, this procedure will also be used for the entire model of money deposits. The expected signs for the lagged demand deposits of money are positively related to the demand deposits of money.

From the above explanation, we may conclude that the conventional demand deposits of money (DDC_t) depend on the real gross domestic product, the nominal interest rate on money, the consumer price index, and the conventional demand deposits of money lagged for one year.

Therefore, the main variables or factors which can influence the conventional demand deposits of money may be specified as follows:

---

[31] Damodar, N. Gujarati, *Basic Econometrics*, 4th Edition, McGraw-Hill, New York: USA, 2003, pp. 681-684.

$$DDC_t = f(GDRL_t, RD_t, CPI_t, DDC_{t-1}), \quad (5.21)$$

where

DDC_t = the demand deposits of money that earns interest at time t (RM million)

$GDRL_t$ = the real gross domestic product at time t (RM million)

RD_t = the nominal interest rate on money at time t (%)

CPI_t = the consumer price index at time t (%)

DDC_{t-1} = the demand deposits of money lagged one year at time t

The relationships of all equations in the models will be in the log-linear form,[32] because one attractive feature of the log-linear form (log-log model), which has made it popular in applied work, is that the slope coefficient β_2 (e.g., a_1) measures the elasticity of Y (DDC_t) with respect to X ($GDRL_t$), that is, the percentage change in Y for a given (small) percentage change in X.[33]

The relationship of the above equation will be in the log-linear form. Thus, the conventional demand deposits of money may be specified as:[34]

$$DDC_t = a_0\ GDRL_t^{a_1}\ RD_t^{a_2}\ CPI_t^{a_3}\ DDC_{t-1}^{a_4}\ \mu^{U_{1t}} \quad (5.22)$$

5.4.2.1.2 Development of the function for the conventional time deposits of money that earns interest (TDC_t)

TDC_t is the time deposits (savings accounts) of money that earns interest and is defined as savings accounts in the banking institutions. According to the Malaysian Central Bank, time deposits are for those who want to earn some income and at the same time want to save their money. Usually, this type of deposit is under the guaranteed custody of the government or banks, and on this deposit, the banks will pay interest to the depositors.

---

[32] Damodar N. Gujarati, *Basic Econometrics*, 4th Edition, McGraw-Hill, New York: USA, 2003, pp. 175-177; see also R. L. Thomas, Chapter 2, 1985, p. 12.

[33] The elasticity coefficient, in calculus notation, is defined as $(dY/Y) / (dX/X) = [(dY/dX)/(X/Y)]$. Readers familiar with differential calculus will readily see that β_2 (e.g., a_1) is in fact the elasticity coefficient.

[34] Damodar, N. Gujarati, *Basic Econometrics*, 4th Edition, McGraw-Hill, New York: USA, 2003, p. 175-178.

The explanatory variables in the equation for conventional time deposits of money (TDC_t) are the same as the explanatory variables in the equation for conventional demand deposits of money (DDC_t). The only differences are in the interest rates for time deposits (RT_t) and conventional time deposits lagged for one year (TDC_{t-1}). We can therefore express the equation for time deposits of money as follows:

$$TDC_t = f(GDRL_t, RT_t, CPI_t, TDC_{t-1}), \qquad (5.23)$$

where

TDC_t = the conventional time deposits of money that earns interest at time t (RM million)

RT_t = the interest rate for time deposits at time t

TDC_{t-1} = the conventional time deposits lagged for one year at time t

Therefore, the relationship for the time deposits equation in log-linear form may be specified as follows:

$$TDC_t = b_0\, GDRL_t^{\,b_1}\, RT_t^{\,b_2}\, CPI_t^{\,b_3}\, TDC_{t-1}^{\,b_4}\, \mu^{U_{2t}} \qquad (5.24)$$

5.4.2.2 The Islamic banks deposits model

5.4.2.2.1 The development of the functions for the Islamic demand deposits of money that earns a profit-share (DDI_t)

DDI_t is the Islamic demand deposits of money that earns a profit-share. This type of demand deposit has similar functions to those of the conventional banks. This demand deposit usually falls under the concept of guaranteed custody (*Al-Wadiah*). With these demand deposits, the depositors have the full right to withdraw their funds at any time without prior notice. Here the profit-share (rate of return to depositors) is at the bank's discretion, based on the percentage of the profit announced by the bank (for more details see chapter four).

From the above explanation and discussion, and by analysing the model of M. K. Hassan (1996), we can further discuss some important factors which influence the Islamic demand deposits of money that earns a profit-share (DDI_t). Amongst these factors are:

a) The real gross domestic product ($GDRL_t$)

According to this theory, an increase in real income ($GDRL_t$) increases the Islamic demand deposits of money, due to people having extra money to save in a bank account. In other words, higher real income implies extra money for the people and thus, there will be larger demand deposits of money. From the above interpretation, we can say that the relationship between real income and Islamic demand deposits of money is in a positive direction.

b) The return to depositors as a profit-share ($SPSD_t$)

An increase in the return to depositors as part of a profit-sharing scheme makes people more willing to save their money, which will increase demand for Islamic demand deposits. In other words, a higher return on money makes people more willing to deposit their money. Therefore, we can conclude that the relationship between the rate of return or profit-share for depositors and Islamic demand deposits is positive.

c) The consumer price index (CPI_t)

Ceteris paribus, an increase in the consumer price index will decrease the Islamic demand deposits of money, because people may have less money to save due to the increasing price of goods. In other words, people need more money for spending because of an increase in the general price level, or inflation. In other words, an increase in price levels will increase the amount of currency needed for transactions. Hence, the expected signs for the relationship between the consumer price index and the Islamic demand deposits of money are negative.

d) Islamic demand deposits of money lagged for one year (DDI_{t-1})

Since an increase in demand deposits may not be observable except by the trend of previous deposits, a lagged dependent variable procedure is used to find a proxy for the unobservable demand deposits of money. The partial adjustment procedure in the equation will include a lagged dependent variable as an additional explanatory variable. The expected signs for the lagged of Islamic demand deposits of money are positively related to the Islamic demand deposits of money.

From the above clarification, we may conclude that the level of Islamic demand deposits of money that earns a profit-share (DDI_t) depend on the real gross domestic product, the rate of return or profit-sharing to depositors, the consumer price index, and the Islamic demand deposits of money that earns a profit-share lagged for one year.

Accordingly, the main variables or factors which may influence the Islamic demand deposits of money that earns a profit-share may be specified as follows:

$$DDI_t = f(GDRL_t, SPSD_t, CPI_t, DDI_{t-1}), \quad (5.25)$$

where

DDI_t = the Islamic demand deposits of money that earns a profit-share at time t (RM million)

$GDRL_t$ = the real gross domestic product at time t (RM million)

$SPSD_t$ = the rate of return or profit-sharing to depositors at time t (%)

CPI_t = the consumer price index at time t

DDI_{t-1} = the Islamic demand deposits of money that earns a profit-share lagged for one year at time t

The relationship of the above equation will be in the log-linear form. Thus, the Islamic demand deposits of money may be specified as:

$$DDI_t = c_0\, GDRL_t^{c_1}\, SPSD_t^{c_2}\, CPI_t^{c_3}\, DDI_{t-1}^{c_4}\, \mu^{U_{3t}} \quad (5.26)$$

5.4.2.2.2 The development of the function for the Islamic time deposits of money that earns a profit-share (TDI_t)

TDI_t is the Islamic time deposits of money that earns a profit-share. These savings deposits usually fall under the concept of guaranteed custody (*Al-Wadiah*). This kind of deposit is usually for those who want to earn some income and at the same time to save their money.

With regard to the explanatory variables for the equation, those for Islamic time deposits (TDI_t) are the same those for the Islamic demand deposits (DDI_t); the only difference is in the rate of return or profit-sharing to depositors ($SPST_t$) and the lag of one year for the dependent variables, thus, we can express the equation for Islamic time deposits of money that earns a profit-share (TDI_t) as follows:

$$TDI_t = f(GDRL_t, SPST_t, CPI_t, TDI_{t-1},), \quad (5.27)$$

where

TDI_t = the Islamic time deposits of money that earns no interest at time t (RM million)

$SPST_t$ = the rate of return or profit-sharing to depositors at time t (%)

TDI_{t-1} = the Islamic time deposits lagged for one year at time t

Therefore, the relationship for the time deposit equation in the log-linear form may be specified as follow:

$$TDI_t = d_0 GDRL_t^{d_1} SPST_t^{d_2} CPI_t^{d_3} TDI_{t-1}^{d_4} \mu^{U_{4t}} \quad (5.28)$$

5.4.2.2.3 The development of the functions for the Islamic investment deposits of money that earns a profit-share (IID_t)

IID_t is the Islamic investment deposits of money that earns a profit-share. These investment deposits (investment accounts) are equivalent to fixed deposits on account in conventional banks. These investment deposits usually fall under the concept of profit-sharing (*Al-Mudharabah*), however, the difference between investment deposits in Islamic banking and fixed deposits in conventional banking is that these types of deposits are not considered as liabilities or equity funds, but as a financial instrument (for more detail see chapter four). Here, the banks invest their clients' money, with their consent, in different projects. After that, on the basis of their initial agreement, the profit-share is distributed between the bank and its customers at a pre-agreed ratio.

The explanatory variables for Islamic investment deposits are the same as for the Islamic demand deposits and Islamic time deposits in terms of the real gross domestic product and the consumer price index. The only differences are in the rate of return or profit-sharing on investment (IPS_t) and the Islamic investment deposits lagged for one year (IID_{t-1})

Hence, the main factors which influence the Islamic investment deposits may be summarised as follows:

a) The real gross domestic product ($GDRL_t$)

According to this theory, an increase in real gross domestic product ($GDRL_t$) may raise the real income of the people and thus will increase Islamic investment deposits of money. In other words, higher real income implies that people have more surplus money and thus will increase Islamic investment deposits. From the above, we may assume that the relationship between real gross domestic product and Islamic investment deposits is in a positive direction.

b) The rate of return or profit-share on investment (IPS_t)

An increase in the profit-share on investments (IPS_t) will encourage people to invest their money, and thus increases their desire to invest their money in the Islamic investment accounts. In other words, a higher return on investment makes people more willing to invest their money. Hence, we can say that the relationship between rate of return or profit-share on investments and the Islamic investment deposits is positive.

c) The consumer price index (CPI_t)

Ceteris paribus, an increase in the consumer price index (CPI_t) may result in a decrease in Islamic investment deposits, since we can assume that an increase in the consumer price index (price) means that people need extra money for transactions, and that they therefore have less money available for investment. The expected signs for the relationship between the consumer price index and the Islamic investment deposits are negative.

d) The Islamic investment deposits lagged for one year (IID_{t-1})

Since Islamic investment deposits are not observable, but an increase or decrease may be observed from the trend of previous investment, a lagged dependent variable procedure is used to find a proxy for the unobservable Islamic investment deposits. Therefore a partial adjustment procedure in the equation will include a lagged dependent variable as an additional explanatory variable. The expected signs for the lagged Islamic investment deposits are positively related to the Islamic investment deposits.

From the above interpretation, we may conclude that the Islamic investment deposits of money that earns a profit-share (IID_t) depend on the real gross domestic product, the profit-sharing on investment, the consumer price index and the one-year lagged Islamic investment deposits.

Therefore, the main factors which can explain the Islamic investment deposits of money that earns a profit-share may be specified as follows:

$$IID_t = f(GDRL_t, IPS_t, CPI_t, IID_{t-1}), \qquad (5.29)$$

where

IID_t = the Islamic investment deposits of money that earns a profit-share at time t (RM million)

IPS_t = the profit-share on investment at time t (%)

IID_{t-1} = the Islamic investment deposits lagged for one year at time t

Hence, the relationship for the Islamic investment deposits equation in the log-linear form may be specified as follows:

$$IID_t = e_0\ GDRL_t^{e_1}\ IPS_t^{e_2}\ CPI_t^{e_3}\ IID_{t-1}^{e_4}\ \mu^{U_{5t}} \qquad (5.30)$$

5.5 THE MODEL STRUCTURE

5.5.1 The model structure for the conventional deposits model

From the above explanation and discussion, the model structures for the conventional demand deposits and conventional time deposits of money demand model in this research are as follows:

$$DDC_t = a_0\ GDRL_t^{a_1}\ RD_t^{a_2}\ CPI_t^{a_3}\ DDC_{t-1}^{a_4}\ \mu^{U_{1t}} \qquad (5.31)$$

$$TDC_t = b_0\ GDRL_t^{b_1}\ RT_t^{b_2}\ CPI_t^{b_3}\ TDC_{t-1}^{b_4}\ \mu^{U_{2t}} \qquad (5.32)$$

The conventional identity equation

$$MDC_t = DDC_t + TDC_t \quad (5.33)$$

5.5.2 The model structure for the Islamic deposits model

The model structures for the Islamic demand deposits, Islamic time deposits and Islamic investment deposits of money demand model in this research are as follows:

$$DDI_t = c_0\ GDRL_t^{c_1}\ SPSD_t^{c_2}\ CPI_t^{c_3}\ DDI_{t-1}^{c_4}\ \mu^{U_{3t}} \quad (5.34)$$

$$TDI_t = d_0\ GDRL_t^{d_1}\ SPST_t^{d_2}\ CPI_t^{d_3}\ TDI_{t-1}^{d_4}\ \mu^{U_{4t}} \quad (5.35)$$

$$IID_t = e_0\ GDRL_t^{e_1}\ IPS_t^{e_2}\ CPI_t^{e_3}\ IID_{t-1}^{e_4}\ \mu^{U_{5t}} \quad (5.36)$$

The Islamic identity equation

$$MDI_t = DDI_t + TDI_t + IID_t \quad (5.37)$$

Closing identity

$$MD_t = MDC_t + MDI_t \quad (5.38)$$

Equation (5.38) is the closing identity equation, where the total deposits of money (MD_t) is equal to conventional deposits of money (MDC_t) plus Islamic deposits of money (MDI_t),

where

DDC_t = the conventional demand deposits of money that earns interest at time t (RM million)

TDC_t = the conventional time deposits of money that earns interest at time t (RM million)

DDI_t = the Islamic demand deposits of money that earns a profit-share at time t (RM million)

TDI_t = the Islamic time deposits of money that earns a profit-share at time t (RM million)

IID_t = the Islamic investment deposits of money that earns a profit-share at time t (RM million)

$GDRL_t$ = the real gross domestic product at time t (RM million)

RD_t = the nominal interest rate on money for demand deposits at time t (%)

RT_t = the nominal interest rate on money for time deposits at time t (%)

CPI_t = the consumer price index at time t (%)

DDC_{t-1} = the conventional demand deposits of money lagged for one year at time t

TDC_{t-1} = the conventional time deposits of money lagged for one year at time t

DDI_{t-1} = the Islamic demand deposits of money lagged for one year at time t

TDI_{t-1} = the Islamic time deposits of money lagged for one year at time t

IID_{t-1} = the Islamic investment deposits of money lagged for one year at time t

$SPSD_t$ = the rate of return/profit-share to depositors at time t (%)

$SPST_t$ = the rate of return/profit-share to depositors at time t (%)

IPS_t = the profit-share for the investors at time t (%)

MDC_t = the total conventional deposits of money at time t (RM million)

MDI_t = the total Islamic deposits of money at time t (RM million)

MD_t = the total deposits of money at time t (RM million)

$U_{1t}, U_{2t}, U_{3t}, U_{4t}, U_{5t}$, = the structural disturbance term at time t

μ = the error term

For the purposes of regression and estimation, the model in this research will be in the log-linear form and is specified as follows:

(A) The conventional model

(1) Conventional demand deposits of money (DDC_t)

$$\text{Log } DDC_t = \log a_0 + a_1 \log GDRL_t + a_2 \log RD_t + a_3 \log CPI_t + a_4 \log DDC_{t-1} + U_{1t} \quad (5.39)$$

Expected signs:

$a_1 > 0$, $a_2 > 0$, $a_3 < 0$, $a_4 > 0$.

(2) Conventional time deposits of money (TDC_t)

$$\text{Log } TDC_t = \log b_o + b_1 \log GDRL_t + b_2 \log RT_t + b_3 \log CPI_t + b_4 \log TDC_{t-1} + U_{2t} \quad (5.40)$$

Expected signs:

$b_1 > 0, b_2 > 0, b_3 < 0, b_4 > 0,$

(B) The Islamic model

(1) Islamic demand deposits of money (DDI_t)

$$\text{Log } DDI_t = \log c_0 + c_1 \log GDRL_t + c_2 \log SPSD_t + c_3 \log CPI_t + c_4 \log DDI_{t-1} + U_{3t} \quad (5.41)$$

Expected signs:

$c_1 > 0, c_2 > 0, c_3 < 0, c_4 > 0,$

(2) Islamic time deposits of money (TDI_t)

$$\text{Log } TDI_t = \log d_0 + d_1 \log GDRL_t + d_2 \log SPST_t + d_3 \log CPI_t + d_4 \log TDI_{t-1} + U_{4t} \quad (5.42)$$

Expected signs:

$d_1 > 0, d_2 > 0, d_3 < 0, d_4 > 0,$

(3) Islamic investment deposits of money (IID_t)

$$\text{Log } IID_t = \log e_0 + e_1 \log GDRL_t + e_2 \log IPS_t + e_3 \log CPI_t + e_4 \log IID_{t-1} + U_{5t} \quad (5.43)$$

Expected signs:

$e_1 > 0, e_2 > 0, e_3 < 0, e_4 > 0,$

5.6 THE MODEL TRANSMISSION PROCESS

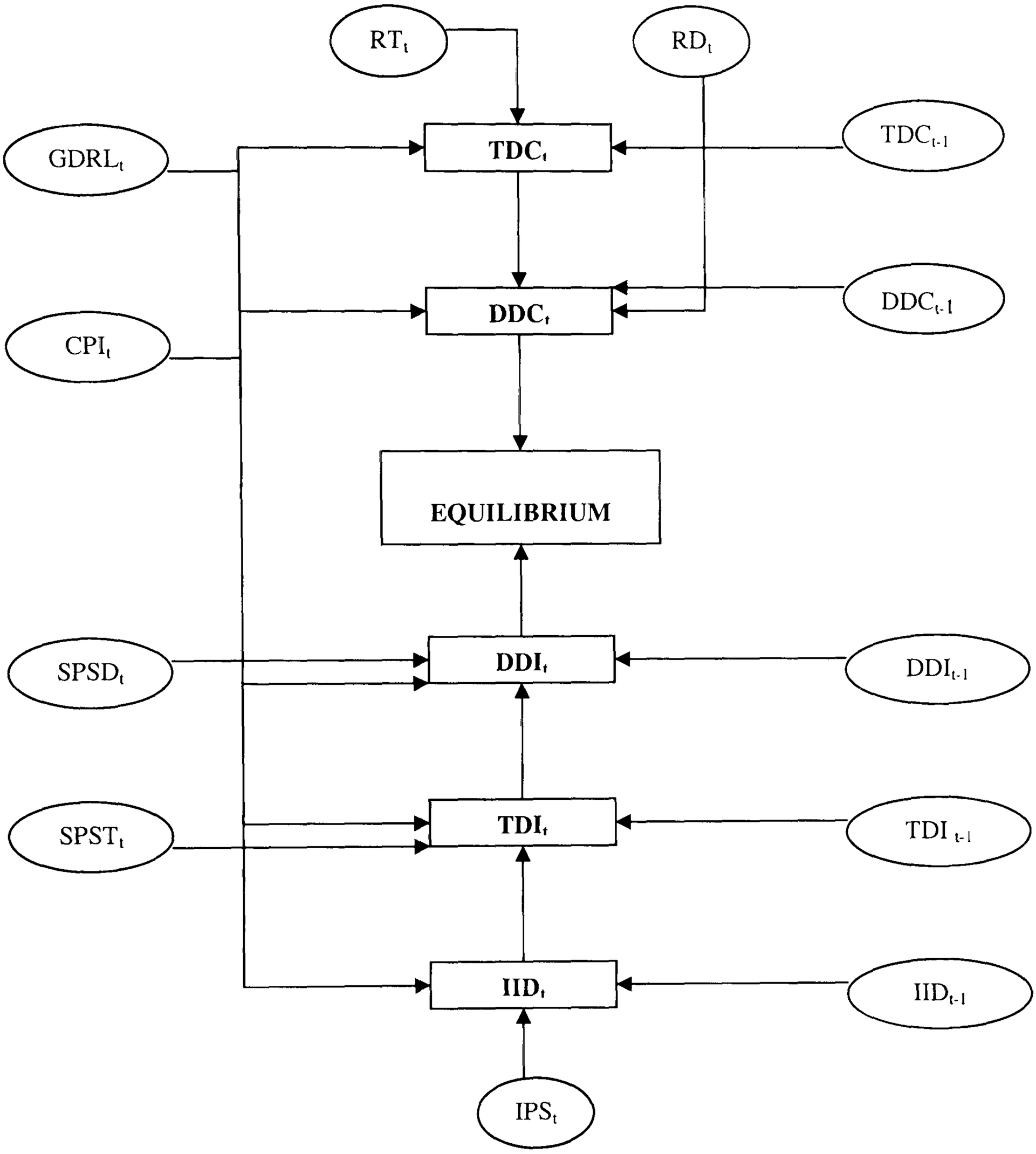
The models for the conventional demand deposits, conventional time deposits, Islamic demand deposits, Islamic time deposits and Islamic investment deposits for both Islamic banks deposit and conventional bank deposits in Malaysia has been developed in order to determine which main variables influence the money deposits in Malaysia. However, we have divided the model structure of money deposits in Malaysia into 2 lots of equations, namely the conventional and Islamic model equations. Figure 5.1 shows that the model equations of the conventional demand deposits (DDC_t) and conventional time deposits (TDC_t) are influenced by the following factors: real gross domestic product ($GDRL_t$), the nominal interest rate on money (RD_t/RT_t), the consumer price index (CPI_t) and the one-year lagged dependent variables (DDC_{t-1} and TDC_{t-1}).

The Islamic demand deposits (DDI_t), the Islamic time deposits (TDI_t) and the Islamic investment deposits (IID_t) are influenced by the following factors: real gross domestic product ($GDRL_t$), the profit-share - $SPSD_t/SPST_t$ for Islamic demand and time deposits, and IPS_t for investment deposits respectively - the consumer price index (CPI_t), and the one-year lagged dependent variables.

The above explanation and explanatory variables show that the more transactions an individual or business makes, the more liquidity they need and the greater is their demand for money. As we know, an important factor in determining the number of transactions is real income. For example, a high-income individual makes larger purchases than a low-income individual, because higher income means more transactions and a greater need for liquidity, so the amount of money demanded should increase when real income increases. In addition when real income increases people have more surplus money to deposits in the bank, and these will increases the money deposits in the banks.

According to the theory of portfolio allocation, with risk and liquidity held constant, the demand for money depends on the expected returns of both money and alternative, non-monetary assets. An increase in the expected return on money increases the demand for money, and an increase in the expected return on alternative assets causes holders of wealth to switch from money to higher-return alternatives, thus lowering the demand for money. The general conclusion we can make is that a higher return (interest) on money makes people more willing to hold money (deposits), and a higher real interest rate means a higher return on alternative assets and thus a switch away from money.

Figure 5.1
The circular flow of the conventional and Islamic banks deposits model in Malaysia



The higher the general level of prices, the more cash people need to conduct transactions and thus the more cash people will want to hold. The general conclusion is that by raising the need for liquidity, a higher price level increases the nominal demand for money. In addition, however, this will decreases the deposits of money in the banks.

In the case of the development model for Islamic banks deposits, its specification is similar to that of the conventional deposits model, and we have divided it into three main equations, namely the Islamic demand deposits, Islamic time deposits and Islamic investment deposits equations. The equation model for Islamic demand deposits (DDI_t) and Islamic time deposits (TDI_t) are influenced by factors such as real gross domestic product ($GDRL_t$), the profit-share [(rate of return to depositors usually in terms of *Al-Wadiah*) ($SPSD_t/SPST_t$)], the consumer price index (CPI_t), and the one-year lagged dependent variables (DDI_{t-1} and TDI_{t-1}).

The equation model for the Islamic investment deposits (IID_t) model is the same as in the development model for Islamic demand deposits and Islamic time deposits, except for the addition of the variable of profit-share for investment (IPS_t), and the one-year lagged dependent variables (IID_t).

The development theory for the Islamic model is similar to the conventional theory of money demand. It means that a higher real income implies more transactions and thus a greater demand for liquidity. A higher expected rate of return to depositors as a profit-share makes people more willing to deposit their money. However, for both models (Islamic and conventional), lagged dependent variables have been included to show that usually an increase in the deposits in the past will ensure an increase of the money deposits in the future, *ceteris paribus*.

In Figure 5.1, specific variables have been used in the circular flow of the conventional and Islamic banks deposits model in Malaysia. Therefore, a list of definitions of the variables in the conventional and Islamic banks deposits model in Malaysia is shown in Table 5.1.

Table 5.1

The models' variables and definitions

Dependent variables	Definition
DDC_t	= The conventional demand deposits that earn interest (RM million)
TDC_t	= The conventional time deposits that earn interest (RM million)
DDI_t	= The Islamic demand deposits that earn a profit-share (RM million)
TDI_t	= The Islamic time deposits that earn a profit-share (RM million)

IID_t = The Islamic investment deposits that earn a profit-share (RM million)

Independent variables — Definition

$GDRL_t$ = The real gross domestic product at time t (RM million)

RD_t = The interest rate on demand deposits of money at time t (%)

RT_t = The interest rate on time deposits of money at time t (%)

CPI_t = The consumer price index at time t (%)

$SPSD_t$ = The returns/profit-share on Islamic demand deposits at time t (%)

$SPST_t$ = The returns/profit-share on Islamic time deposits at time t (%)

IPS_t = The returns/profit-share on Islamic investment deposits at time t (%)

DDC_{t-1} = The conventional demand deposits lagged for one year at time t

TDC_{t-1} = The conventional time deposits lagged for one year at time t

DDI_{t-1} = The Islamic demand deposits lagged for one year at time t

TDI_{t-1} = The Islamic time deposits lagged for one year at time t

IID_{t-1} = The Islamic investment deposits lagged for one year at time t

5.7 THE CORRELATION MODEL

The objective here is to discuss and assess the relative effectiveness of and differences between the profit-sharing (interest-free) deposits and interest-bearing deposits in the formulation of monetary policy. As mentioned earlier, D.S.Batten and D.L.Thornton (1983) argued that any money demand becomes useful for the objective only if it satisfies two criteria;

i) The money demand has to be under the full and direct control of the central monetary authority, and

ii) There should be a strong and reliable link between the money demand and the main goals of the monetary authority. If the first requirement was satisfied, but there is no link between the money demand and the macroeconomic variables, then the effectiveness of these money demands ceases to exist.[35]

Regression and correlation are closely related to, but conceptually very different from, regression analysis and correlation analysis, where the regression (primary

[35] Ibid., pp. 36-42.

objective) measures the strength or degree of linear association between two variables, while the correlation coefficient measures the strength of this linear association. For example, in this research, we are interested in finding the correlation (coefficient) between conventional demand deposits and monetary base, between conventional time deposits and monetary base, between Islamic demand deposits and monetary base, between Islamic time deposits and monetary base and between Islamic investment deposits and monetary base.

In addition, as already noted, we are not primarily interested in such measurements as are provided by a regression analysis. Instead, we try to estimate or predict the average value of one variable on the basis of the fixed values of other variables. Thus, we may want to know whether we can predict the value of conventional demand deposits by having knowledge of the monetary base.

Regression and correlation also have some fundamental differences that are worth mentioning. In regression analysis there is an asymmetry in the way the dependent and explanatory variables are treated. The dependent variable is assumed to be statistical, random, or stochastic, that is, to have a probability distribution.[36] However, the SAS/STAT User's Guide, Version 6, Fourth Edition, Volume 1, states that;

> "Regression analysis is the analysis of the relationship between one variable and another set of variables. The relationship is expressed as an equation that predicts a response variable (also called a dependent variable or criterion) from a function of regressor variables (also called independent variables, predictors, explanatory variables, factors, or carriers) and parameters. The parameters are adjusted so that a measure of fit is optimised."[37]

In correlation analysis, on the other hand, we treat any two variables symmetrically: there is no distinction between the dependent and explanatory variables. After all, the correlation between, for example, conventional demand deposits and the monetary base is the same as that between the monetary base and conventional demand deposits. Moreover, both variables are assumed to be random.[38]

As we know, most correlation theory is based on the assumption of the randomness of variables, whereas most regression theory is conditional upon the assumption that the dependent variable is stochastic but the explanatory variables are fixed or non-stochastic.

---

[36] Damodar N. Gujarati, *Basic Econometrics*, 4th Edition, McGraw-Hill Companies, New York, USA, 2003, p. 23

[37] SAS/STAT, *User's Guide*, Version 6, Fourth Edition, Vol. 1, Cary, NC: SAS Institute Inc., SAS Campus Drive, Cary, North Carolina, USA, 1990, p. 3.

[38] The term random is a synonym for the term stochastic. A random or stochastic variable is a variable that can take on any set of values, positive or negative, with a given probability.

To test the link between money deposits that earn a profit-share and money deposits that earn interest and the monetary base,[39] the following equations are estimated:

(a) The correlation between interest-based and monetary base model

$$(1) \quad DDC_t = \alpha_1 + \beta_1 MB_t + \varepsilon_{1t} \qquad (5.44)$$

$$(2) \quad TDC_t = \alpha_2 + \beta_2 MB_t + \varepsilon_{2t} \qquad (5.45)$$

(b) The correlation between profit-sharing (interest-free) and monetary base model

$$(3) \quad DDI_t = \alpha_3 + \beta_3 MB_t + \varepsilon_{3t} \qquad (5.46)$$

$$(4) \quad TDI_t = \alpha_4 + \beta_4 MB_t + \varepsilon_{4t} \qquad (5.47)$$

$$(5) \quad IID_t = \alpha_5 + \beta_5 MB_t + \varepsilon_{5t}, \qquad (5.48)$$

where

DDC_t = the conventional demand deposits that earn interest at time t

TDC_t = the conventional time deposits that earn interest at time t

DDI_t = the Islamic demand deposits that earn a profit-share at time t

TDI_t = the Islamic time deposits that earn a profit-share at time t

IID_t = the Islamic investment deposits that earn a profit-share at time t

MB_t = the monetary base at time t

$\varepsilon_{1t}, \varepsilon_{2t}, \varepsilon_{3t}, \varepsilon_{4t}, \varepsilon_{5t}$ = the random error terms for each model at time t

5.8 THE VELOCITY OF MONEY MODEL

To be useful as a policy target, the demand for money must be a stable function of a relatively small number of variables, and the central bank must be able to control monetary growth. This analysis is designed to determine the stability of money velocity in the case of both money that earn a profit-share and money that earns interest. For this purpose the Fisher equation of exchange will be used as follows:

---

[39] Monetary base is equal to money in circulation plus total reserve money.

$$M * V = Y, \tag{5.49}$$

where

M = the money under consideration

V = the velocity of money

Y = the nominal gross domestic product

(a) The velocity of the interest-bearing money model (equation)

$$(1) \quad VMDDC_t = GDP_t / DDC_t \tag{5.50}$$

$$(2) \quad VMTDC_t = GDP_t / TDC_t \tag{5.51}$$

(b) The velocity of the profit-sharing (interest-free) money model (equation)

$$(1) \quad VMDDI_t = GDP_t / DDI_t \tag{5.52}$$

$$(2) \quad VMTDI_t = GDP_t / TDI_t \tag{5.53}$$

$$(3) \quad VMIID_t = GDP_t / IID_t \ , \tag{5.54}$$

where

$VMDDC_t$ = the velocity of money for the conventional demand deposits at time t

$VMTDC_t$ = the velocity of money for the conventional time deposits at time t

$VMDDI_t$ = the velocity of money for the Islamic demand deposits at time t

$VMTDI_t$ = the velocity of money for the Islamic time deposits at time t

$VMIID_t$ = the velocity of money for the Islamic investment deposits at time t

GDP_t = the nominal gross domestic product at time t

DDC_t = the conventional demand deposits at time t

TDC_t = the conventional time deposits at time t

DDI_t = the Islamic demand deposits at time t

TDI_t = the Islamic time deposits at time t

IID_t = the Islamic investment deposits at time t

The variance[40] of this velocity will indicate the stability of the deposits (demand) of a particular type of money. In addition, the velocity of money plays a crucial role in contemporary macroeconomics analysis, and the stability of the velocity of money represents a necessary requirement for effective monetary policy. The primary objective of monetary policy (control over money deposits/demand) is to achieve low unemployment and low inflation.

In every economy, including that of Malaysia, this can be achieved only if the velocity of money is stable over time. Otherwise, a misbehaving or unstable velocity of money will weaken the link between monetary policy and the rest of the economy. Indeed, an unstable velocity of money could lead to overall economic and financial instability, since erroneous monetary moves lead to deepened cycles of high unemployment and/or high inflation. Therefore, having a stable or smooth velocity of money is vital for prudent monetary policy-making and for a prosperous economy.

5.9 THE DATA SOURCES AND THE METHOD OF REGRESSION

The data used in this research are time series data for 1983 to 2001 which are shown in Appendix A. The data are obtained from different publications and formal sources which include the Monthly Statistics Bulletin, the Central Bank of Malaysia; The Third Outline Perspective Plan 2001-2010, Economic Planning Unit; White Paper Status of The Malaysian Economy 1999, Government of Malaysia; The Central Bank and The Financial System in Malaysia–A Decade of Change 1989-1999, the Central Bank of Malaysia; Eighth Malaysia Plan, 2001-2005, Government of Malaysia; and International Financial Statistics by the International Monetary Fund (IMF).

According to the model structure, we can see that all the explanatory variables in the equation in the model are the predetermined variables, that is, those (whose values are) determined outside the model. In addition, the predetermined variables are treated as non-stochastic.[41] All the model equations on the right-hand side of the variables are exogenous variables and predetermined variables[42] (Damodar, N, Gujarati, 2003: 58-

---

[40] The variance (standard deviation) gives an indication of how closely or widely the individual X values are spread around their mean value.

[41] Damodar, N. Gujarati, *Basic Econometrics*, 4th Edition, McGraw-Hill Companies, New York: USA, 2003, pp. 276-278.

[42] The predetermined variables are divided into two categories: *exogenous*, current as well as lagged, and *lagged endogenous*. Thus, X_{1t} is a current (present time) exogenous variable, while $X_{1(t-1)}$ is a lagged exogenous variable, with a lag of one time period. $Y_{1(t-1)}$ is a lagged endogenous variable with a lag of one time period, but since the value of $Y_{1(t-1)}$ is known at the current time t, it is regarded as non-stochastic, hence, a predetermined variable.

78;[43] J. Johston, 1997: 305-309;[44] R S. Pindyck & D L. Rubinfeld, 1991: 292-298;[45] R. L. Thomas: 1985: 8-17);[46] therefore, regression estimation through the ordinary least square econometric method (OLS) can be used.

In addition, the SAS/ETC version 6 has also been used for all the values of the parameters estimated.[47] At the same time, the model structure regresses in terms of a log-linear form, because through this type of regression it can fulfil the requirements of the objectives of both the model and the research, which can resolve several issues, such as: (a) It will linearise the non-linear function as can be used in the method of OLS in regression, and the ordinary least squares (least squares estimators) are unbiased and efficient in any sample size, small or large.[48] In other words, ordinary least square (OLS) will produce the *best linear unbiased estimator* (BLUE) in the regression.[49] (b) It will ensure the homogeneity of variances, and these estimators also produced minimum variance in the class of all linear unbiased estimators.[50] (c) It can minimise the standard error of regression, and can provide the minimum mean-square-error (MSE) estimators[51] (d) It can minimise the problem of heteroscedasticity, especially in the model using cross-sectional data,[52] however, heteroscedasticity does not destroy the unbiasedness and consistency property of OLS estimators, and (e) In the log-linear model, we can easily say that the coefficients for every explanatory variable or independent variable are elastic/responsive to every dependent variable in the model.[53]

---

[43] Damodar, N. Gujarati, *Basic Econometrics*, 4th Edition, McGraw-Hill Companies, New York: USA, 2003, pp. 58-78.
[44] J. Johnston, *Econometric Methods*, 3th Edition, McGraw-Hill, New York: USA, 1997, pp. 305-309.
[45] Robert S. Pindyck & Daniel L. Rubinfeld, *Econometric Models and Econometric Forecasts*, 3th Edition, McGraw-Hill, INC, New York: USA, 1991, pp. 292-298.
[46] R. L. Thomas, *Introductory Econometrics: Theory and Applications*, Longman Group Limited, London: UK, 1985, pp. 8-17.
[47] SAS/STAT *User's Guide*, Version 6, Fourth Edition, Vol. 1, Cary, NC: SAS Institute Inc., SAS Campus Drive, Cary, North Carolina, 1990, United States of America.
[48] Damodar N. Gujarati, *Basic Econometrics*, 4th Edition, McGraw-Hill Companies, New York, 2003, p. 27; see also R. L. Thomas, Chapter 2, 1985, pp. 27-30. See also Hayashi, Fumio, 2000, *Econometrics*, p. 1.
[49] SAS/STAT *User's Guide*, Version 6, Fourth Edition, Vol. 2, SAS Institute Inc., SAS Campus Drive, Cary, North Carolina, USA, 1990, p. 1354.
[50] Ibid., op. cit., p. 26; see also R. L. Thomas, Chapter 2, 1985, pp. 18-20.
[51] Ibid., pp. 900-903. See also Hayashi, Fumio, 2000, *Econometrics*, p. 15.
[52] Ibid., op. cit., pp. 400-427. See also Hayashi, Fumio, 2000, *Econometrics*, pp. 4-10.
[53] Hayashi Fumio, op. cit., pp. 175-177.

5.10 CONCLUSIONS

The overall discussion of the theory and the development of the Islamic and conventional banks econometric model in this chapter provides the foundation for the regression analysis and results detailed in chapter six. On the other hand, these models have also been used for the purposes of simulation in order to check which model is more accurate and usefull for the purpose of policy implementation in Malaysian banking industry and for the Malaysian economy in general. In addition, the hypothesis model developed in this chapter is also used in chapter six to estimate whether Islamic banks deposits are more stable and controllable compared to conventional banks deposits.

CHAPTER SIX

THE REGRESSION, SIMULATION AND THE HYPOTHESIS TEST RESULTS

6.1 INTRODUCTION

The discussion in this chapter will be centered on the regression and estimation analysis of the parameters, including the value of R^2, t statistics and *Durbin h*. In addition, a discussion will also be conducted of several other diagnostic tests on hypotheses, i.e., the Chow test to test whether Islamic banks deposits are more stable than conventional deposits, looking at t test, *coefficient* and adjusted R^2 values to determine if Islamic banks deposits have a stronger relationship with the monetary base compared to the conventional banks deposits, and the values of variances to see whether Islamic banks deposits are more stable than conventional deposits in the Malaysian dual banking system. Consequently, the *Pearson Correlation Coefficient test* is used to check the problem of *multicollinearity* between the independent variables in the model. In addition, a discussion and analysis of a number of policy simulations of the model will be made.

6.2 THE REGRESSION AND EMPIRICAL RESULTS

As a whole, the results for every parameter in this research are satisfactory. The parameters for every explanatory variable are in accordance with the theory, which was expected, and some of them are significant at $\alpha = 10$ per cent. From the *Durbin h* results we can see that the equation in the model is free from the autocorrelation problem between the (error term) probability variable in the model, meaning that there is no first order autocorellation.

The *Pearson Correlation Coefficient test* is applied to see whether the problem of *multicollinearity* between the explanatory variables is acceptable. This can be seen in Table 6.12.

(A) The conventional deposits equation

6.2.1 The conventional demand deposits equation

The results for the equation of the conventional demand deposits are as follows:

$$\begin{aligned}\widehat{\text{Log DDC}}_t = &- \underset{(-1.442)}{4.7240} + \underset{(1.812)}{1.1753}{}^{*} \log \text{GDRL}_t + \underset{(1.865)}{0.2731}{}^{*} \log \text{RD}_t - \underset{(-0.620)}{0.1245} \log \text{CPI}_t \\ &+ \underset{(1.353)}{0.5291} \log \text{DDC}_{t-1} \qquad (6.1)\end{aligned}$$

$R^2 = 0.9861$ F Value = 212.211 *Durbin h* = 0.61

The numbers in brackets are *t*–values.

* Significant at the 10 per cent level.

The above results show that all the signs of the estimated coefficient are in accordance with the theory. The R^2 value shows that a 98 per cent change in the conventional demand deposits can be explained by the explanatory variables. The value of *Durbin h* shows that there is no first order autocorrelation problem.

1) Real gross domestic product ($GDRL_t$)

The coefficient for the real gross domestic product is positive and is significant at the 10 per cent level in explaining the conventional demand deposits. The estimated elasticity of the conventional demand deposits with respect to the real gross domestic product is 1.1753. This means, *ceteris paribus*, for every 1 per cent increase in the real gross domestic product, the conventional demand deposits will increase by 1.1753 per cent.[1] The parameters in the model measures the percentage change in Y for a 1 per cent change in X. The first expression in equation 6.1 shows that the elasticity of this function is simply β, and the second expression in equation 6.1 shows that the slope of the log-log specification represents the elasticity. Thus equation 6.1 specifies a constant elasticity function. Such specifications frequently appear in applied work, possibly because of their simplicity and ease of interpretation, since slopes in log-log regressions are direct estimates of constant elasticities (J. Johnston, and J. DiNardo, 1997, p. 45, and

[1] See Hayashi, Fumio, *Econometrics*, 2000, p. 4. For example, β_2 (a_1, see pages 165) represents the change in the dependent variable when the second regressor increases by one unit while other regressors are held constant In the language of calculus, this can be expressed as $\delta yi / \delta xi_2 = \beta_2$.

see also pp. 88-99)[2]. This result also shows that the real gross domestic product plays an important role in determining the increase in demand deposits in conventional bank accounts. This also means that people have more surplus money or income, which enables them to deposit their money in the bank. These results confirm the observation made by Wilson that:

> "In contrast, there does seem to be a close association between what was happening to the macroeconomy and aggregate commercial bank deposits."[3]

2) The interest rate (RD_t)

The interest rate coefficient is positive and is in accordance with the theory. This shows that when the interest rate increases, it acts as a stimulus for people to deposit their extra money or income in the bank in order to get interest. This result also shows that the interest rate is significant in explaining the conventional demand deposits at the 10 per cent level. The responsiveness of demand deposits with respect to the interest rate is 0.2731. This means, *ceteris paribus*, that for every 1 per cent increase in the interest rate, conventional demand deposits will increase by only 0.2731 per cent. Consequently, the results also show that this variable is important in explaining the conventional demand deposits.

3) The consumer price index (CPI_t)

The coefficient for the consumer price index agrees with the theory, but the consumer price index is not significant in explaining the conventional demand deposits. The elasticity of the conventional demand deposits with respect to the consumer price index is -0.1245. This means, *ceteris paribus*, that for every 1 per cent increase in the consumer price index, the conventional demand deposits will decrease by only 0.1245 per cent, demonstrating that an increase in the consumer price index will not have a major impact on the conventional demand deposits.

---

[2] Jack Johnston and John DiNardo, *Econometric Methods*, 4th Edition, McGraw-Hill International Editions, New York: USA 1997, p. 45, and see also pp. 88-99.
[3] Wilson, op. cit., p. 127.

4) <u>The conventional demand deposits lagged for one year (DDC_{t-1})</u>

The coefficient for this variable is compatible with the theory; however, the estimated coefficient for the conventional demand deposits lagged for one year is not significant in explaining the conventional demand deposits. The results also show that the adjustment level is quite moderate. The conventional demand deposits have adjusted by about 47.1 per cent [$\delta = (1 - 0.5291) = 0.4709$] from the original planned demand deposits for each year.[4]

The estimated elasticity for each variable is shown in Table 6.2.1a below:

Table 6.2.1a
Values of elasticity of the conventional demand deposits

Variables	Values of elasticity
$LGDRL_t$	1.1753
LRD_t	0.2731
$LCPI_t$	-0.1245
$LDDC_{t-1}$	0.4709

The results show that the conventional demand deposits can be explained by the real gross domestic product, the interest rate, the consumer price index and the conventional demand deposits lagged for one year. In addition, it is interesting to see that the responsiveness of real gross domestic product to conventional demand deposits is 1.1753. This means, *ceteris paribus,* that for every 1 per cent increase in real gross domestic product, the conventional demand deposits will increase by 1.1753 per cent. These results are not surprising, as they confirm the observation made by Rodney Wilson that:

> "For commercial bank demand deposits in aggregate, there appears to be a close association with GDP growth. As such deposits are used largely for transactions purposes this is not surprising. During the late 1980s and early 1990s when there were high rates of GDP growth as already indicated, demand deposit grew between two and three times as rapidly with the peak of 24.4 per cent in 1989, followed by increases of 17.8 per cent and 11.7 per cent in the following years. During this period prices were rising by only 2 to 4 per cent annually, which implies that the need to maintain real cash balances was probably not a significant factor explaining transactions deposit growth, but what mattered was the fast pace of real growth."[5]

---

[4] Damodar, N. Gujarati, *Basic Econometrics*, 4th Edition, McGraw-Hill, New York: USA, 2003, p. 284.
[5] Rodney Wilson, *Islamic Finance*, FT Financial Publishing, Pearson Professional Limited, London: UK, 1997, p. 128.

6.2.2 The conventional time deposits equation

The results for the equation of the conventional time deposits are as follows:

$$\widehat{\text{Log TDC}}_t = \underset{(-1.501)}{-2.9573} + \underset{(4.349)}{1.7267^{***}} \log \text{GDRL}_t + \underset{(4.877)}{0.3498^{***}} \log \text{RT}_t - \underset{(-0.856)}{0.1361} \log \text{CPI}_t + \underset{(0.478)}{0.1494} \log \text{TDC}_{t-1} \qquad (6.2)$$

$R^2 = 0.9941$ F Value = 501.950 *Durbin h* = 1.34

The numbers in brackets are *t*–values.

*** Significant at the 1 per cent level.

The results show that the entire coefficient estimated above is in accordance with the theory. The value of R^2 also shows that a 99 per cent change in conventional time deposits can be explained by the explanatory variables. The *Durbin h* values also show that there is no first order autocorrelation problem present in the model.

1) <u>The real gross domestic product (GDRL_t)</u>

The estimation results show that the real gross domestic product is an important factor in explaining the conventional time deposits. The coefficient of the real gross domestic product is positive according to the theory and significant at the 1 per cent level. The estimated elasticity of the conventional time deposits with respect to the real gross domestic product is 1.7267. This means, *ceteris paribus*, that for every 1 per cent increase in the real gross domestic product, the conventional time deposits will go up by 1.7267 per cent. The elasticity of the conventional time deposits with regard to real gross domestic product may be caused by the capability of the people's real income to react to changes. This also means that people have surplus income to deposit in the bank.

2) <u>The interest rate (RT_t)</u>

The results also show that the coefficient for the interest rate is positive according to the theory and significant at the 1 per cent level to explain the conventional time deposits. However, the conventional time deposits are not elastic with respect to the interest rate. The estimated elasticity of conventional time deposits with respect to the

interest rate is 0.3498. This means, *ceteris paribus*, that for every 1 per cent increase in the interest rate, the conventional time deposits will increase by only 0.3498 per cent.

3) The consumer price index (CPI_t)

The coefficient for the consumer price index is in line with the theory but it is not significant in explaining the conventional time deposits. The elasticity of the conventional time deposits with respect to the consumer price index is –0.1361, which indicates, *ceteris paribus*, that for every 1 per cent increase in the consumer price index, the conventional time deposits will decrease by 0.1361 per cent.

4) The conventional time deposits lagged for one year (TDC_{t-1})

The results also show that the estimated coefficient for the conventional time deposits lagged for one year is not significant but is in accordance with the theory. The above results also indicate that the adjustment rate is moderate at 0.8506 [$\delta = (1 - 0.1494) = 0.8506$]. This means that the conventional time deposits have adjusted by 85.1 per cent from the lagged time deposits.

The above estimated results show that the conventional time deposits can be explained by the real gross domestic product, the interest rate, the consumer price index, and the conventional time deposits lag phenomenon.

The elasticity estimation for each variable in this equation is shown in Table 6.2.2a below:

Table 6.2.2a
Values of elasticity of the conventional time deposits

Variables	Values of elasticity
$LGDRL_t$	1.7267
LRT_t	0.3498
$LCPI_t$	-0.1361
$LTDC_{t-1}$	0.8506

The above regression results and Table 6.2.2a illustrate the relationship or responsiveness of the interest rate on time deposits and real gross domestic product with regard to conventional time deposits. The responsiveness of the real gross domestic product and of the interest rate on time deposits to conventional time deposits is 1.7267 and 0.3498 respectively. This shows that, *ceteris paribus*, every 1 per cent increase in real gross domestic product and in the interest rate on time deposits will increase the

conventional time deposits by 1.7267 and 0.3498 per cent respectively, and is significant at the 1 per cent level.

This also shows that the real gross domestic product and the interest rate play crucial roles for the time deposits made by depositors in conventional banks. These results confirm Rodney Wilson's observation that:

> "Demand deposits in Malaysian commercial banks fell by around 1 per cent a year in 1984-86, and time deposits fell by over 2 per cent annually in 1984-87. The latter trend may have reflected the fall of over 6 percentage points in interest on time deposits from 9.5 per cent in 1984 to 3.0 per cent by 1987. When interest rates again rose from 3.8 per cent in 1998 to 7.18 per cent, time deposits also increased, indicating that for Malaysians, at least in the Chinese community if perhaps not for the Bumiputra Muslims, interest rates affect financial behaviour." (pp. 127-128). He adds:
>
> "Savings deposits with commercial banks in Malaysia are around four times the value of demand deposits, which demonstrates the concern of bank clients to obtain a return on their funds rather than merely holding idle transactions balances. During the 1970s and the early 1980s there was an especially rapid increase in savings deposits, but this tended to slow down in the mid-1980s, and since then the growth of demand deposits has been more rapid, reflecting the desire for liquidity in a rapidly growing economy, not least to be able to take advantage of buying opportunities on the booming Kuala Lumpur Stock Exchange, as well as trading opportunities more generally."[6]

(B) The Islamic deposits equation

6.2.3 The Islamic demand deposits equation

The results for the equation of the Islamic demand deposits are as follows:

$$\widehat{\text{Log DDI}_t} = \underset{(-1.845)}{-3.5217} + \underset{(0.705)}{0.6895 \log \text{GDRL}_t}{}^{***} + \underset{(3.583)}{1.3905 \log \text{SPSD}_t} - \underset{(-0.632)}{0.6359 \log \text{CPI}_t} + \underset{(2.382)}{0.7495 \log \text{DDI}_{t-1}}{}^{**} \qquad (6.3)$$

$R^2 = 0.9608$ F Value = 420.660 *Durbin h* = 0.84

The numbers in brackets are *t*–values.

---

[6] Ibid., pp. 127-129.

** Significant at the 5 per cent level
*** Significant at the 1 per cent level

The above results show that all of the estimated coefficient variables are in accordance with the theory. The value of R^2 shows that a 96 per cent change in the Islamic demand deposits can be explained by the explanatory variables.

1) Real gross domestic product ($GDRL_t$)

The coefficient for the real gross domestic product is positive and in accordance with the theory, but this variable is not significant. The estimated responsiveness of the Islamic demand deposits to real gross domestic product is 0.6895, which means, *ceteris paribus*, that the Islamic demand deposits will increase by only 0.6895 per cent for every 1 per cent increase in real gross domestic product. The weakness in the responsiveness of Islamic demand deposits to real gross domestic product appears to confirm the observation made by Wilson regarding Bank Islam Malaysia deposit growth, namely that:

> "Between 1987 and 1991, Malaysian gross domestic product growth actually accelerated from 5.4 per cent to 9.7 per cent. The years of economic stagnation had been the mid-1980s, with GDP falling by 1 per cent in 1985 and growing by a mere 1 per cent in 1986. Yet these were the years when Islamic Bank deposits grew rapidly. It seems there is no correlation between macroeconomic performance and that of the Islamic Bank."[7]

2) Profit-share ($SPSD_t$)

However, the results reveal that the profit-share for demand deposits is an important factor in explaining the Islamic demand deposits. Profit-sharing for the Islamic demand deposits is significant at the 1 per cent level. The estimated elasticity of the Islamic demand deposits with respect to profit-sharing is 1.3905. This means, *ceteris paribus*, that for every 1 per cent increase in the profit-share (rate of return) for demand deposits, the Islamic demand deposits will increase by 1.3905 per cent. The elasticity of Islamic demand deposits may be caused by the capabilities of the depositors to respond in a positive manner to profit-sharing. Thus, in the case of Islamic demand deposits, especially for the Islamic people or society, it depends on the profit-share (rate of return) which they can get from their deposit.

[7] Ibid., p. 127.

3) Consumer price index (CPI_t)

The results also show that the coefficient for the consumer price index is not significant. The estimated elasticity of the Islamic demand deposits with respect to the consumer price index is -0.6359, which means the Islamic demand deposits are inelastic with respect to the consumer price index.

4) The Islamic demand deposits lagged for one year (DDI_{t-1})

The results also show that the adjustment level is quite moderate, meaning that the Islamic demand deposits have adjusted by about 25.1 per cent [$\delta = 1 - 0.7495] = 0.2505$] from the original plan for the previous year. The estimated coefficient for the Islamic demand deposits lagged for one year is significant at the 5 per cent level.

The elasticity estimation for each variable in this equation is shown in Table 6.2.3a below:

Table 6.2.3a
Values of elasticity of the Islamic demand deposits

Variables	Values of elasticity
$LGDRL_t$	0.6895
$LSPSD_t$	1.3905
$LCPI_t$	-0.6359
$LDDI_{t-1}$	0.2505

The results of the estimation show that the Islamic demand deposits can be explained by the real gross domestic product, the profit-share, the consumer price index, and the Islamic demand deposits lagged for one year.

6.2.4 The Islamic time deposits equation

The results for the Islamic time deposits calculation are as follows:

$$\text{Log } \hat{TDI}_t = \underset{(-1.975)}{-3.8132} + \underset{(0.698)}{0.6585 \log GDRLt} + \underset{(1.856)}{1.2526 \log SPST_t}^{*} - \underset{(-0.246)}{0.2623 \log CPI_t} + \underset{(2.848)}{0.7764 \log TDI_{t-1}}^{**} \qquad (6.4)$$

$R^2 = 0.9289$ F Value = 284.503 *Durbin h* = 0.44

The Regression, Simulation and the Hypothesis Test Results

Numbers in brackets are *t*-values

* Significant at the 10 per cent level.
** Significant at the 5 per cent level.

From the output of the estimation, the results show that the entire coefficient estimated is in accordance with the theory. The value R^2 shows that a 92 per cent change in Islamic time deposits can be explained by the explanatory variables or exogenous variables.

1) Real gross domestic product ($GDRL_t$)

The responsiveness of Islamic time deposits to real gross domestic product is 0.6585. It is inelastic, showing that for every 1 per cent increase in real gross domestic product, the Islamic time deposits will increase by only 0.6585 per cent. The results also show that the real gross domestic product is not significant.

2) Profit-sharing for time deposits ($SPST_t$)

The estimated elasticity of Islamic time deposits with regard to profit-sharing for the time deposits is 1.2526. This means that the Islamic time deposits are elastic with respect to profit-sharing for time deposits. *Ceteris paribus*, for every 1 per cent increase in the profit-share for time deposits, Islamic time deposits will increase by 1.2526 per cent. The profit-share is significant at the 10 per cent level in explaining the changes in Islamic time deposits.

3) Consumer price index (CPI_t)

The estimated elasticity of Islamic time deposits with respect to the consumer price index is -0.2623, which means that the Islamic time deposit is less responsive to the consumer price index and the parameter is not significant. For every 1 per cent increase in the consumer price index, the Islamic time deposits will decrease by 0.2623 per cent.

4) Islamic time deposits lagged for one year (TDI_{t-1})

The above results also indicate that the adjustment rate is moderate at 0.2236 [$\delta = (1 - 0.7764) = 0.2236$]. This means that the Islamic time deposits have adjusted by 22.4

per cent from the lagged Islamic time deposits for the previous year, however, this variable is significant at the 5 per cent level.

The elasticity estimation for each variable in this equation is shown in Table 6.2.4a below:

Table 6.2.4a
Values of the elasticity of the Islamic time deposits

Variables	Values of elasticity
$LGDRL_t$	0.6585
$LSPST_t$	1.2526
$LCPI_t$	-0.2623
$LTDI_{t-1}$	0.2236

The estimated results given above indicate that the Islamic time deposits can be explained by the real gross domestic product, the profit-share for time deposits, the consumer price index, and the Islamic time deposits lagged for one year.

6.2.5 The Islamic investment deposits equation

The results for the Islamic investment deposits are as follows:

$$\begin{aligned}\wedge \qquad\qquad * \qquad\qquad **\\ \text{Log IID}_t = \underset{(-1.442)}{-3.7435} + \underset{(1.803)}{0.2426 \log \text{GDRL}_t} + \underset{(2.774)}{1.7188 \log \text{IPS}_t} - \underset{(-0.661)}{0.7198 \log \text{CPI}_t}\end{aligned}$$

$$\begin{aligned}&\qquad\qquad **\\ &+ \underset{(2.755)}{0.7587 \log \text{IID}_{t-1}}\end{aligned} \qquad (6.5)$$

$R^2 = 0.9436$ $\quad$ F Value = 139.590 $\quad$ *Durbin h* = 0.66

Numbers in brackets are *t*-values.

* Significant at the 10 per cent level.
** Significant at the 5 per cent level.

The value R^2 shows that the change in Islamic investment deposits can be explained by the explanatory variables or exogenous variables. The *Durbin h* shows that there is no autocorrelation problem.

1) Real gross domestic product ($GDRL_t$)

The coefficient for the real gross domestic product is positive and significant at the 10 per cent level in explaining the Islamic investment deposits. The estimated elasticity

of Islamic investment deposits with respect to real gross domestic product is 0.2426, and it is thus inelastic. This means, *ceteris paribus*, that for every 1 per cent increase in real gross domestic product, Islamic investment deposits will increase by only 0.2426 per cent.

2) Profit-share for investment (IPS_t)

The coefficient for the profit-share (rate of return) for investment positively agrees with the theory. The responsiveness of Islamic investment deposits with respect to profit-sharing for investment is 1.7188, indicating that every 1 per cent increase in the profit-share for investment results in a 1.7188 per cent increase in the Islamic investment deposits. In addition, the profit-share for investment coefficient is significant at the 5 per cent level.

3) Consumer price index (CPI_t)

The coefficient for the consumer price index is negative and agrees with the theory. The results also show that the consumer price index is not significant in explaining the Islamic investment deposits. The estimated elasticity of the Islamic investment deposits with regard to the consumer price index is –0.7198, indicating that for every 1 per cent increase in the consumer price index, Islamic investment deposits decrease by 0.7198 per cent.

4) Islamic investment deposits lagged for one year (IID_{t-1})

The results also show that the adjustment level is quite moderate, meaning that Islamic investment deposits have adjusted by about 24.1 per cent [$\delta = (1 - 0.7587) = 0.2413$] from the original planned deposit for each year. The estimated coefficient for the Islamic investment deposits lagged for one year is significant at the 5 per cent level, and this coefficient is positive in accordance with the theory.

The estimated values of the elasticity of the Islamic investment deposits are shown in Table 6.2.5a below:

The Regression, Simulation and the Hypothesis Test Results

Table 6.2.5a
Values of the elasticity of the Islamic investment deposits

Variables	Values of elasticity
$LGDRL_t$	0.2426
$LIPS_t$	1.7188
$LCPI_t$	-0.7198
$LIID_{t-1}$	0.2413

The results of the estimation show that the real gross domestic product, the profit-share for investment deposits, the consumer price index, and the Islamic investment deposits lagged for one year, can explain the Islamic investment deposits. In particular, the elasticity of the variable of profit-sharing for investment is 1.7188.

The above estimated results (DDI, TDI, and IID), and Tables 6.2.3a, 6.2.4a and 6.2.5a show the strong relationship between DDI, TDI and IID and the rate of return to depositors/profit-share to depositors (SPSD, SPST and IPS). The responsiveness of the SPSD, SPST and IPS to DDI, TDI and IID is 1.3905, 1.2526 and 1.7188 respectively. It seems that the clients of the Islamic banks are interested in obtaining high returns from their deposits.

In addition, there seems to be no strong correlation between real gross domestic product and the Islamic banks deposits (DDI, TDI and IID). This can be observed from the responsiveness of real gross domestic product with regard to Islamic bank deposits. The responsiveness of GDRL with respect to Islamic bank deposits is 0.6895, 0.6585 and 0.2426 respectively. These results are in line with Wilson's observation that:

> "Most deposits with Bank Islam Malaysia were in savings or investment accounts rather than current accounts. Clients appear to have viewed the bank as a repository for precautionary and savings funds rather than transactions balances. The deposits tended to be regarded as long term holdings such as savings to cover the deposit on a house, the purchase of a major consumer item such as a car, education fees, pilgrimage expenses, payment for a marriage feast or the cost of health treatment in old age. As Table 10.2 shows, the return on such deposits increased sharply for longer minimum notice of withdrawal periods. Depositors giving five years or 60 months' notice could obtain twice the return of those giving only one month's notice. Over 70 per cent of investment depositors are at one year's notice or more, at such lengthy periods the returns compare very favourably with the interest paid by conventional riba-based banks in Malaysia."[8]

[8] Ibid., p. 128.

6.3 SIMULATION RESULTS

The simulation of a model may be performed for a variety of reasons, including model testing and evaluation, historical policy analysis, and forecasting.[9] When the specification of the model is valid, other simulation tests can be done for the said model. The validation of the model is very important, since a model with the wrong specification will make the estimation results and policy implications inconsistent and prone to bias.

We have several methods by which to measure and evaluate the model. We can expect the results of a historical simulation to match the behaviour of the real world rather closely, so often one will perform a historical simulation and examine how closely each endogenous variable tracks the historical data. Therefore, it is desirable to have some quantitative measure of how closely individual variables track their corresponding data series. In this research we will use *Root Mean Squared Simulation Error* (RMSE) and *Root Mean Squared Simulation Per cent Error* (RMSPE). These measures may be defined as follows:

a) RMSE $= \sqrt{\frac{1}{T}\sum_{t=1}^{T}(Y_t^s - Y_t^a)^2}$

b) RMSPE $= \sqrt{\frac{1}{T}\sum_{t=1}^{T}(Y_t^s - Y_t^a)/(Y_t^a \times 100)}$

Where

Y^s_t = simulated value of endogenous variables (Y_t)
Y^a_t = actual value of endogenous variables (Y_t)
T = number of periods in the simulation

Both of these statistical methods are designed to measure the deviation of the simulated variable from its actual time path. The smaller the result, the more accurate the estimated value.[10] The results for the RMSE and RMSPE are shown in Table 6.3a.

---

[9] Robert S. Pindyck and Daniel L. Rubinfeld, *Econometric models and economic forecasts*, McGraw-Hill, New York: USA 1991, p. 334.
[10] Ibid., pp. 336-338.

Table 6.3a
Simulation Statistical Results (RMSE and RMSPE)

Equation	RMSE	RMSPE
Conventional demand deposit	0.0746	0.6889
Conventional time deposit	0.0398	0.3897
Islamic demand deposit	0.2737	2.4623
Islamic time deposit	0.2845	2.6979
Islamic investment deposit	0.2956	3.0664

A useful simulation statistic besides *Root Mean Squared Error* (RMSE) and *Root Mean Squared Per cent Error* (RMSPE) to measure the accuracy of the model and apply to the evaluation of historical simulations, or ex-post forecasts, is *Theil's Inequality Coefficient* or *U* statistics. This may be shown as follows:

$$U = \frac{\sqrt{\frac{1}{T}\sum_{t=1}^{T}(Y_t^s - Y_t^a)^2}}{\sqrt{\frac{1}{T}\sum_{t=1}^{T}(Y_t^s)^2} + \sqrt{\frac{1}{T}\sum_{t=1}^{T}(Y_t^a)^2}}$$

Theil's Inequality Coefficient is a method of forecasting accuracy through the comparison between the simulation value (Y^s_t) and the actual value (Y^a_t) of endogenous variables. The numerator of *U* is just the *Root Mean Squared Simulation Error*, but the denominator is such that *U* always falls between 0 and 1. If $U = 0$, that means $Y^s_t = Y^a_t$ for all *t* values, revealing a perfect fit. If $U = 1$, on the other hand, the predictive performance of the model is as bad as it could possibly be. When $U = 1$, simulated values are always zero when actual values are non-zero, or non-zero predictions have been made when actual values are zero, hence they are easy to predict, or simulated values are positive (negative) when actual values are negative (positive).

It is possible to divide *Theil's Inequality Coefficient* into three main portions, or into what we may call the proportions of inequality, as follows:

$$U^M = \frac{(Y^s_t - Y^a_t)^2}{(1/T)\sum(Y^s_t - Y^a_t)^2}$$

$$U^S = \frac{(\sigma_s - \sigma_a)^2}{(1/T)\sum(Y^s_t - Y^a_t)^2}$$

$$U^C = \frac{2(1-\rho)\sigma_s\,\sigma_a}{(1/T)\sum(Y^s_t - Y^a_t)^2}$$

The proportions U^M, U^S, and U^C are called the bias, the variance, and the covariance proportions, respectively, and they are useful as a means of breaking the simulation error down into its characteristic sources.

The bias proportion U^M is an indication of systematic error, since it measures the extent to which the average values of the simulated and actual series deviate from each other. The variance proportion U^S indicates the ability of the model to replicate the degree of variability in the variable of interest (endogenous variable). If U^M and U^S are small, close or equal to zero, it means the model that has been used is considered good. The covariance proportion U^C measures unsystematic error; if U^C is close or equal to 1, the model is considered good and the estimated value is also accurate.[11]. The results pertaining to *Theil's Inequality Coefficient* or *U* statistics are shown in Table 6.3b.

Table 6.3b
Simulation Statistical Results (U Statistics)

Equation	U	U^M	U^S	U^C
Conventional demand deposit	0.003	0.000	0.001	0.999
Conventional time deposit	0.002	0.000	0.001	0.999
Islamic demand deposit	0.004	0.000	0.003	0.997
Islamic time deposit	0.005	0.000	0.004	0.996
Islamic investment deposit	0.005	0.000	0.006	0.994

Where

U = Theil's Inequality Coefficient
U^M = the bias proportion
U^S = the variance proportion
U^C = the covariance proportion

However, there are also other methods that can be used to measure the accuracy of the simulation, such as measuring the capability of the model to reach the turning points of the actual data. For this study, data for the period 1983 – 2001 were used; one simulation was carried out to determine the capability of the model to reach the historical data. The results from Table 6.3c, Table 6.3d and Figures 6.3a and 6.3e show that base line simulation results can track the true value. On the basis of the above-mentioned three criteria, this model can be considered as a valid model and can be used for other simulations.

---

[11] Ibid., pp. 340-341.

Table 6.3c
Comparison between actual values and simulated values in real values

Year	DDC	DDCHAT	TDC	TDCHAT
1985	11,901	11,672	22,552	23,101
1990	20,197	21,982	43,549	40,203
2000	59,042	59,946	106,325	115,995
2001	62,108	60,822	107,531	116,541

Yearly average growth rate (%)				
1985-90	11.2	13.4	14.1	11.7
1991-00	10.5	11.1	8.2	10.2
1985-01	10.5	10.4	9.8	10.1

Year	DDI	DDIHAT	TDI	TDIHAT	IID	IIDHAT
1985	140	132	251	211	365	288
1990	232	261	375	378	673	767
2000	6,763	5,975	4,561	4,084	19,929	18,005
2001	7,308	6,964	5,381	4,888	25,676	24,311

Yearly average growth rate (%)						
1985-90	10.6	14.6	8.4	12.3	13.0	21.6
1991-00	44.6	35.2	33.8	26.0	44.8	41.5
1985-01	26.8	26.7	20.2	20.8	29.0	24.1

Table 6.3d
Comparison between actual values and simulated values in logarithm values

Year	DDC	DDCHAT	TDC	TDCHAT
1985	9.3843	9.3649	10.0236	10.0476
1990	9.9133	9.9939	10.6816	10.6017
2000	10.9860	11.0012	11.5743	11.6648
2001	10.0366	11.0157	11.5855	11.6868

Year	DDI	DDIHAT	TDI	TDIHAT	IID	IIDHAT
1985	4.9381	4.8859	5.5227	5.3471	5.8999	5.6627
1990	5.4459	5.5648	5.6179	5.9366	6.5112	6.6428
2000	8.8193	8.6955	8.4252	8.3147	9.9000	9.7984
2001	8.8967	8.8485	8.5906	8.4946	10.1533	10.0987

According to the simulation results shown in Figures 6.3a to 6.3e, we can conclude that the Islamic banks deposit [Islamic demand deposit (DDI_t), Islamic time deposit (TDI_t), and Islamic investment deposit (IID_t)] has more variances between actual values and simulated values than the conventional deposits [conventional demand deposit (DDC_t), and conventional time deposit (TDC_t)]. This may be explained by several factors:

(i) Conventional money demand accounts have more deposits compared to Islamic money demand accounts in the Malaysian banking institutions. There are several reasons for this, namely:

a) Conventional banking has achieved a considerable degree of success in terms of market penetration as it consists of well-established and well-developed banking

institutions. Therefore, the conventional banks have more customer/client deposits than Islamic banks.

b) The public relations between conventional banks and their customers/clients are better than with Islamic banking. As we know, conventional banks offer various returns on demand, time/savings and fixed deposits to their customers mainly on a monthly, 6 monthly or yearly bases to their clients. They therefore have a strong and viable relationship with their clients. However, in Malaysia, the Islamic banks operating in the dual banking system are not very different from conventional banks, since they also give returns on investment accounts that are in line with those of the demand and time/savings accounts of the *riba* banks.

Therefore, many banking clients in Malaysia see no difference, compared with the operation of conventional banks. For this reason, there seems to be no point in Malaysians moving to Islamic banks. Additionally, the Islamic banks should really become aware of the strong relationships and client choices offered by conventional banks. In reality, the spread of knowledge about Islamic instruments and financial techniques has been very limited, which explains why only a minority of Malaysians know anything about Islamic banking. Therefore, an enormous and aggressive effort is needed if Islamic banking in Malaysia is to become more widely known and understood by the people and by potential customers.

c) The Islamic banking operations and marketing still lag behind those of conventional banking. Generally speaking, Islamic banking in Malaysia does not market or promote its services extensively. Advertising and promotion can certainly increase awareness of new alternatives and excite interest; but unfortunately this is not an effective way of explaining the workings of *Al-murabahah or Al-musharakah*. This fact is corroborated by Wilson:

> "Islamic banks can and do produce free booklets explaining the principles for those who express an interest in the system. Such booklets seem to suffer from two main deficiencies. First, for the more sophisticated client who is accustomed to dealing with conventional *riba* banks and is knowledgeable about western financial practice, the literature does not relate Islamic financing to the client's experience. There is a failure to explain the method of Islamic financing in western terms, and this tends to alienate the client. Second, for the client with minimal financial knowledge and little or no experience of banks, the literature is unnecessary, complicated and legalistic."[12]

---

[12] Ibid., p. 24

Figure 6.3a: Simulation of the conventional demand deposit, 1983-2001

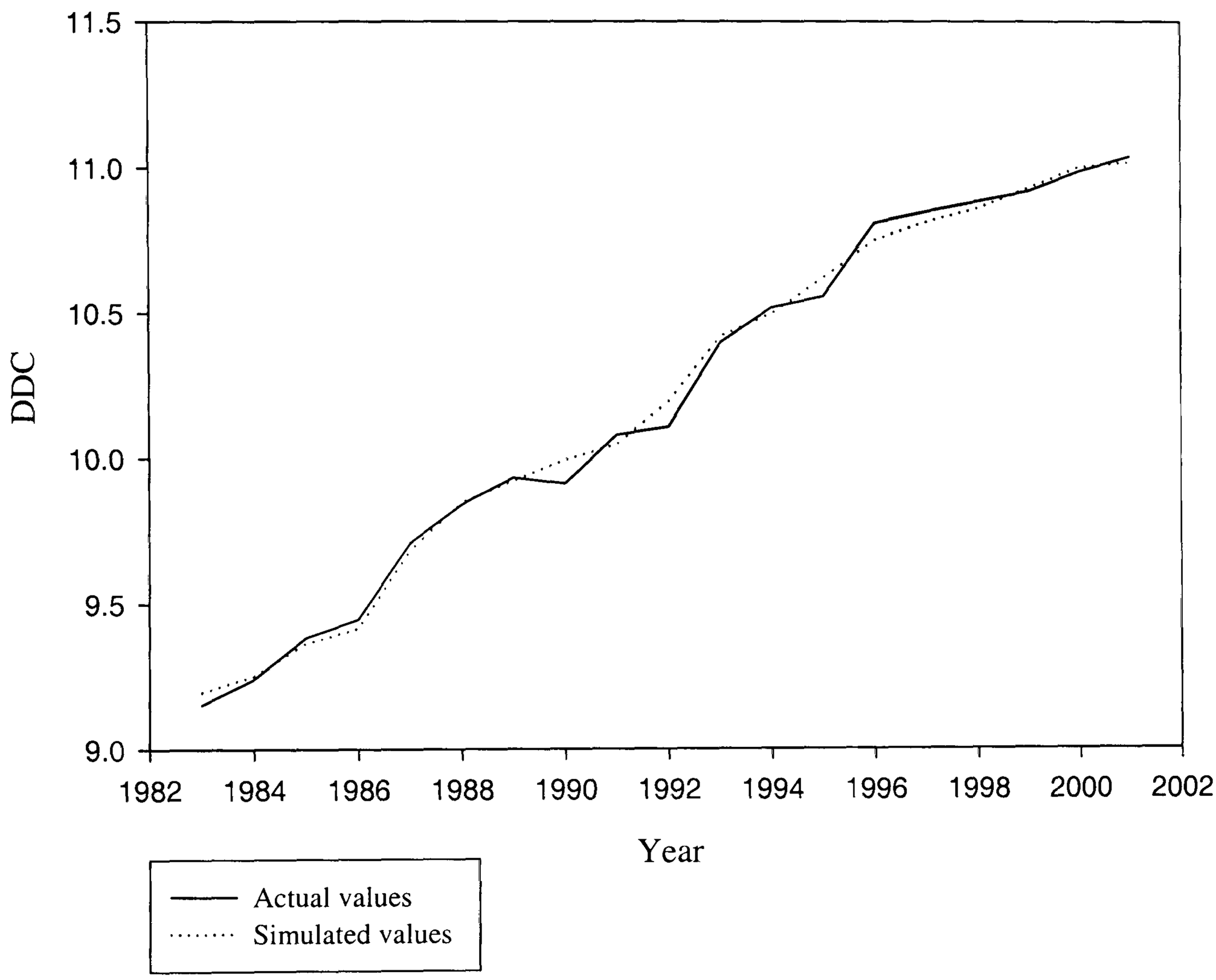


Figure 6.3b: Simulation of the conventional time deposit, 1983-2001

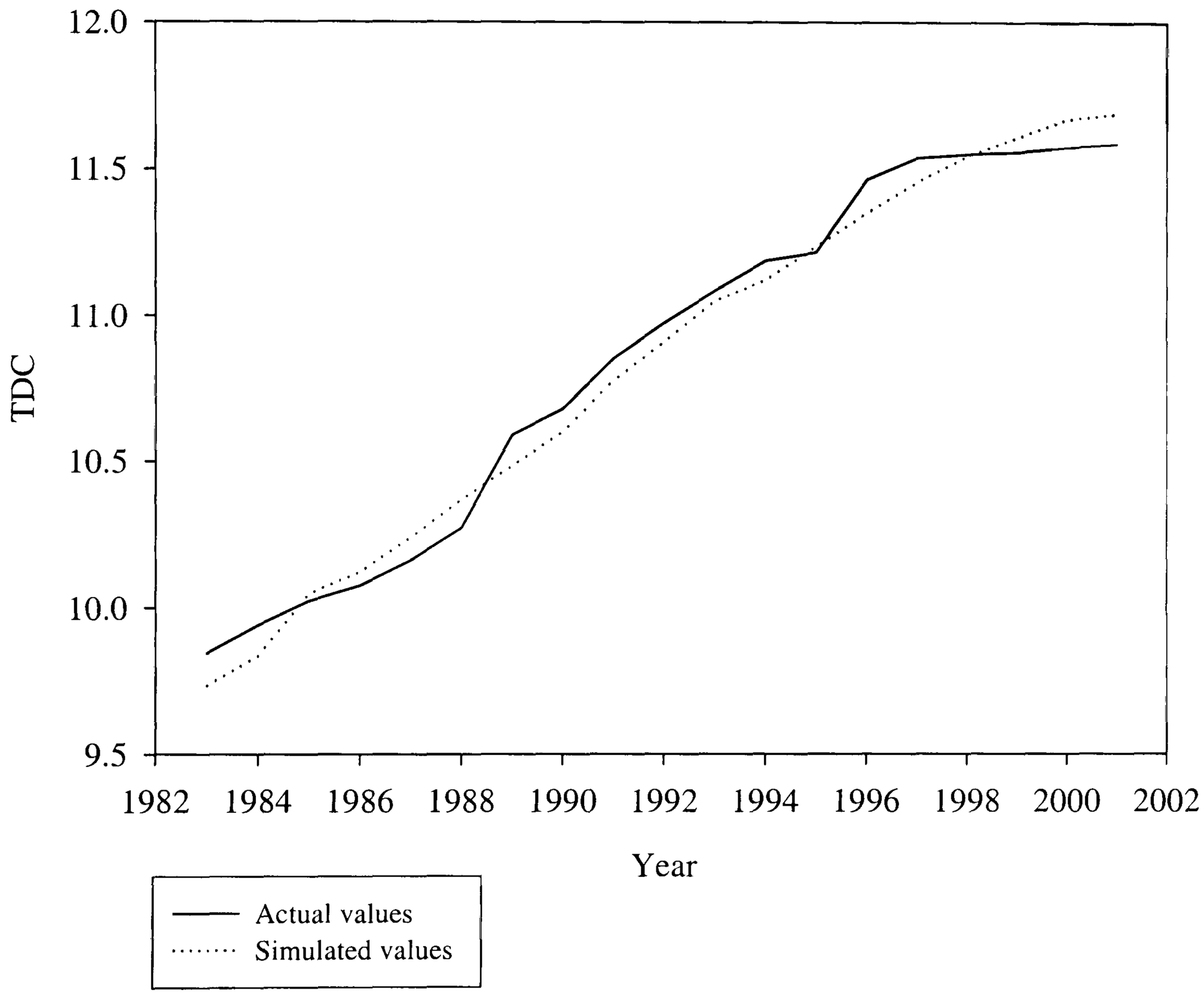


Figure 6.3c: Simulation of the Islamic demand deposit, 1983-2001

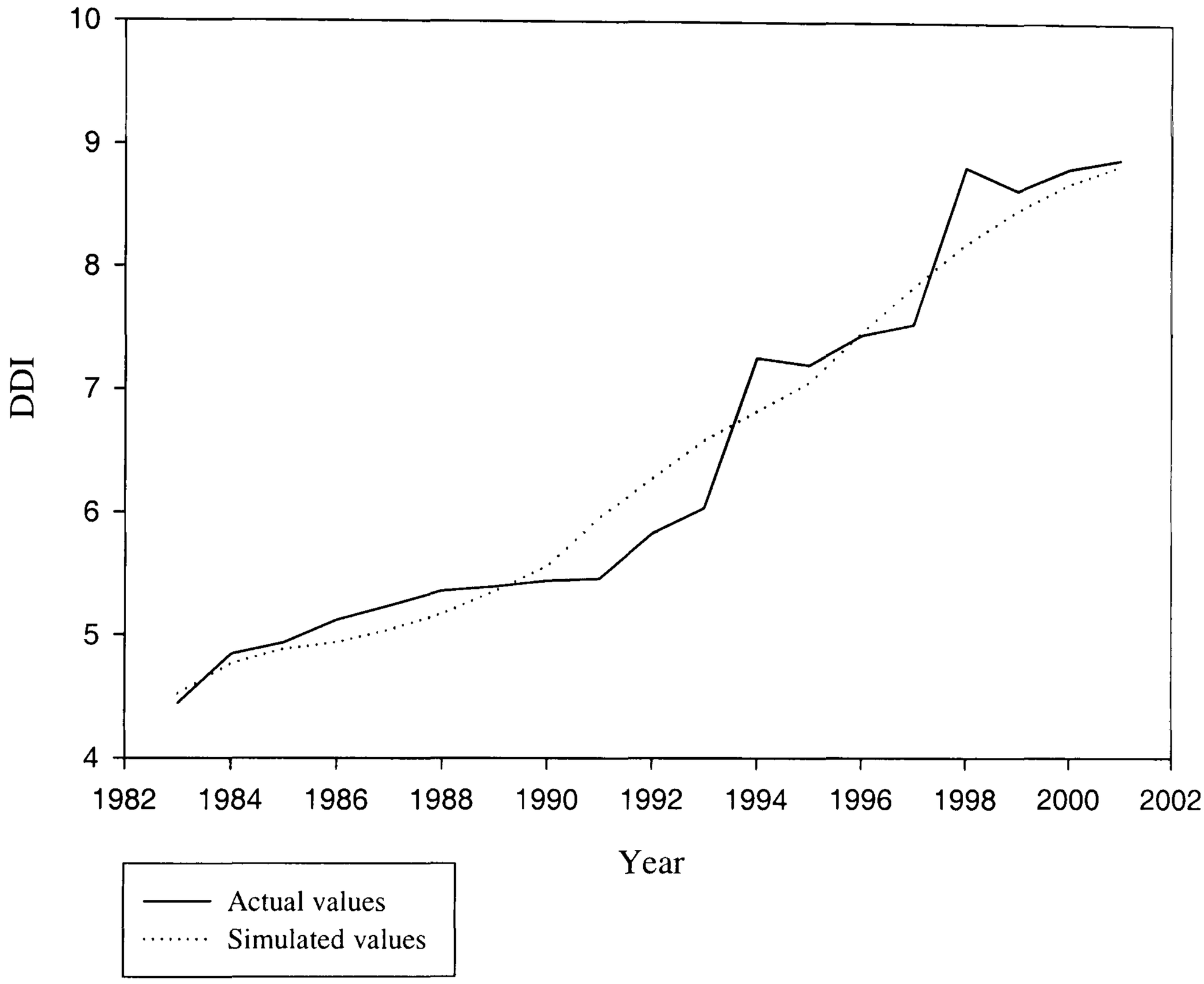


Figure 6.3d: Simulation of the Islamic time deposit, 1983-2001

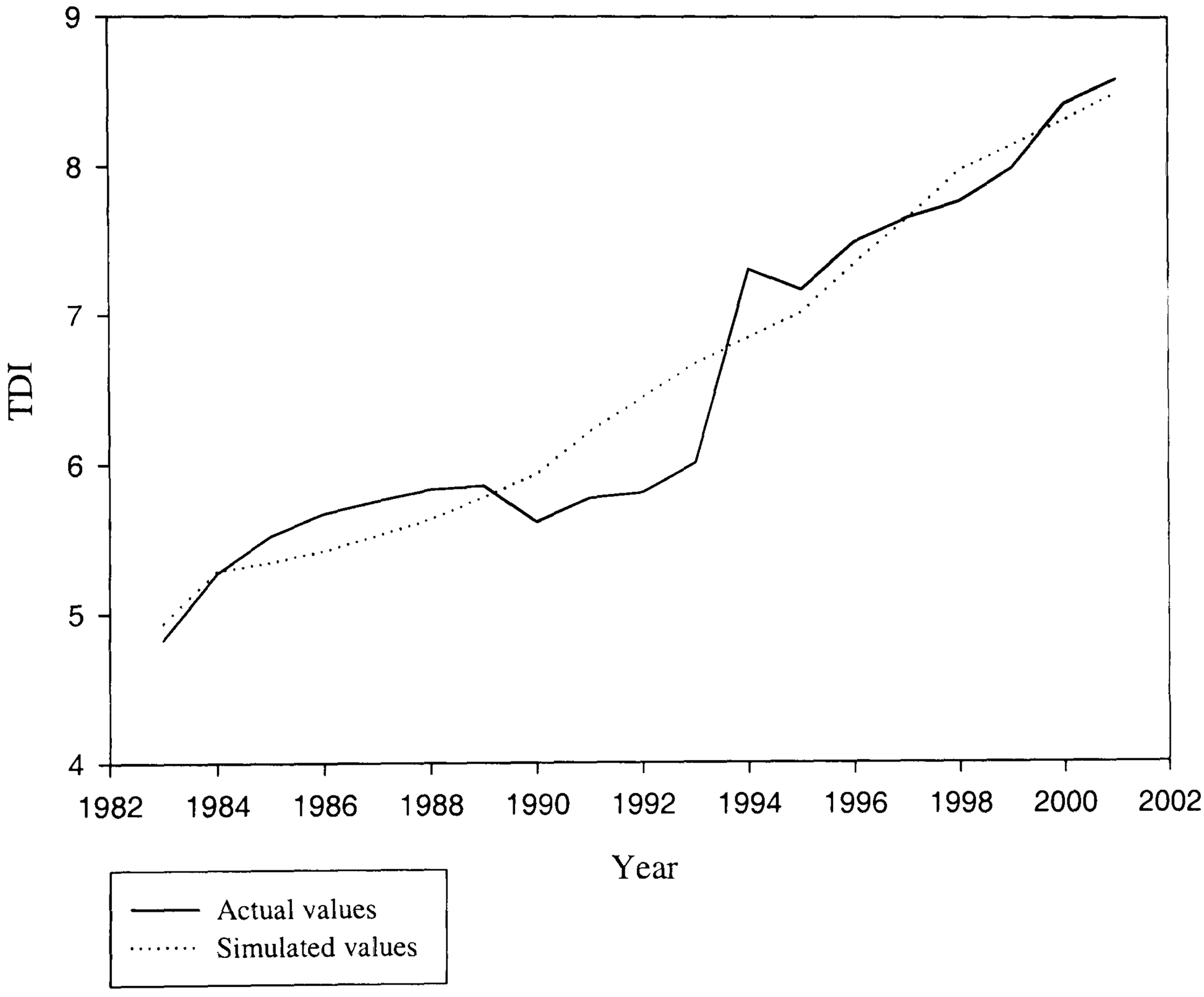
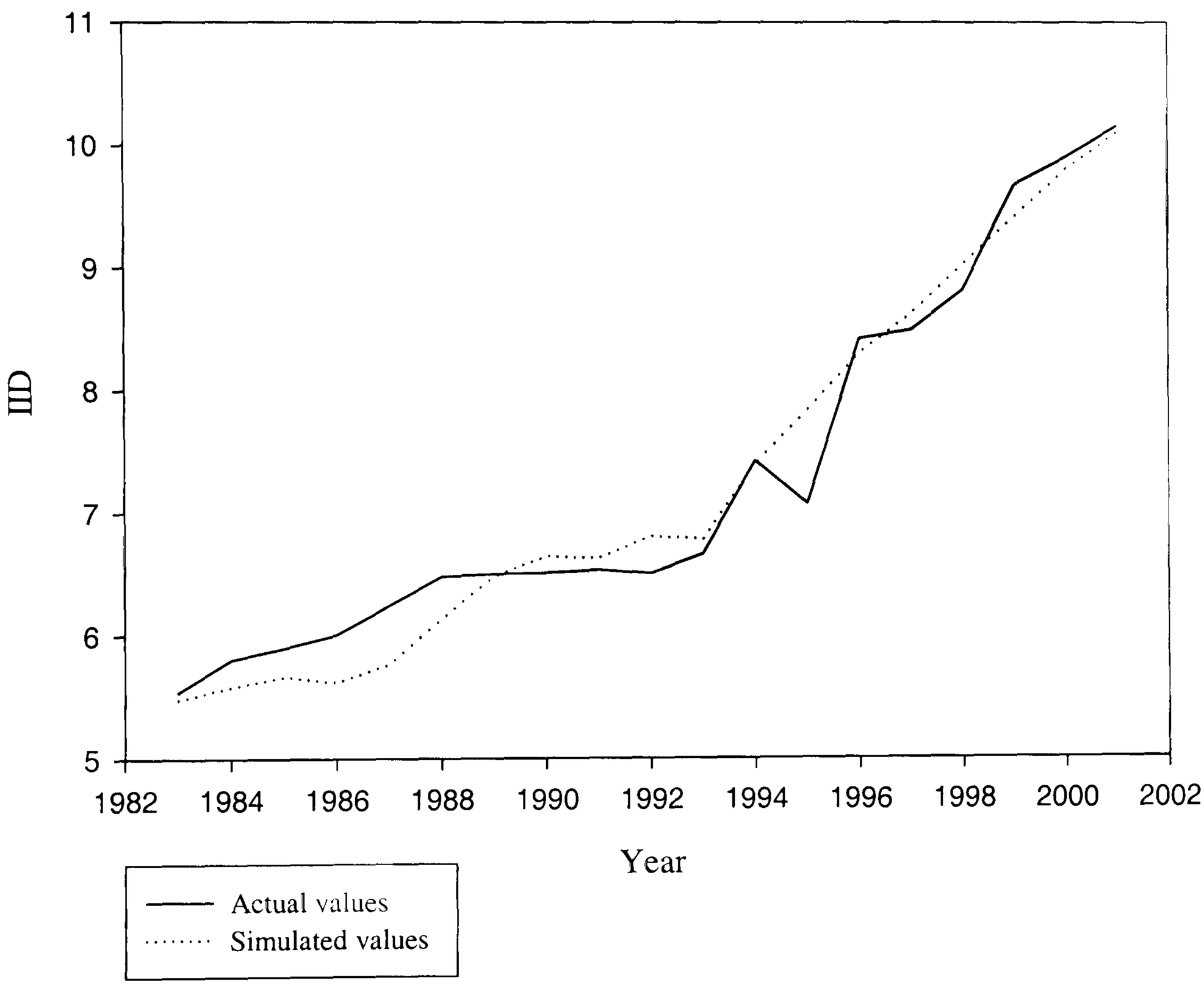


Figure 6.3e: Simulation of the Islamic investment deposit, 1983-2001



d) Islamic banking faces tough competition from the *riba*-based bank in attracting customers/clients. For many moderate *Muslims* in Malaysia, any deal involving *riba* is *haram* (forbidden), but they have come to realise that the implementation of Islamic banking in Malaysia is not very different from conventional banking. There is also the aforementioned issue of the customer's deposits, as Rodney Wilson observes:

> "There is little evidence that customers have changed their bank as a result of Islamization in Iran and Pakistan, as the measures introduced affected all the banks. With Islamization, the banks were offering a different type of service to both depositors and those seeking advances, but there was no difference from services offered by competing banks. For most clients, locational convenience, personal acquaintance, and habit continued to be the main factors determining the customer loyalty, not the type of service offered. Neither, in practice, have the terms offered on investment deposits varied greatly between the banks. It is unlikely in any case that any differences would have much effect on customer loyalty, as a higher profit share one year does not guarantee a higher share the next, and clients are well aware of this. Perhaps after a few years, however, Islamic banks offering investment accounts will place more stress on their track records once the new practices are longer established. Then clients may compare results with financial intermediaries advising on relative performance, as is the case with unit trusts in general, and income unit trusts in particular, financial products that are in some respects similar to profit-sharing accounts with Islamic banks."[13]

6.4 HYPOTHESIS TESTS

6.4.1 That Islamic banks deposits (profit-sharing) are more stable than conventional deposits (interest-based)

In order to test the hypothesis that deposits with profit-sharing are more stable than deposits with interest, the stability of deposits function is tested with the aid of the Chow test. One of the more common applications of the *F* test is in tests of structural change. This test is often labeled a CHOW test, in reference to Chow (1960) who invented it. In specifying a regression model, we assume that its assumptions apply to all the observations in our sample. It is straightforward, however, to test the hypothesis that some of or all the regression coefficients are different in different subsets of data.[14]

---

[13] Rodney Wilson, *Islamic Financial Markets*, Biddles Ltd, Guilford and King's Lynn, London: UK, Great Britain, 1990, pp. 20-21.

[14] William H. Greene, *Econometric Analysis*, 4th Edition, Prentice Hall, Inc., Upper Saddle River,

The Regression, Simulation and the Hypothesis Test Results

To test whether the parameters in all the equations are stable, we can apply the separate regressions. This can be done by using the data for the entire sample, 1983 to 2001, and for the two sub-periods, 1983 to 1991 and 1992 to 2001, for all the equations. The F statistic test is as follow:

$$F = \frac{(ESS_N - ESS_{N1} - ESS_{N2})/\mathrm{K}}{(ESS_{N1} + ESS_{N2})/(\mathrm{N} - 2\mathrm{K})} \quad ,$$

Where

ESS_N = the sum of squares error for the entire sample
ESS_{N1} = the sum of squares error for the first sub-periods
ESS_{N2} = the sum of squares error for the second sub-periods
K = the numbers of explanatory variables including intercept
N = the sample size

We can test all equations to determine whether their parameters are stable or not as follows:

(1) Conventional demand deposit ($LDDC_t$)

$$F[5,9] = \frac{(0.07196 - 0.01199 - 0.01375)/5}{(0.01199 + 0.01375)/(9 + 10 - 10)} = 3.23$$

At the critical value of 4.25, we would accept the hypothesis that the parameters are the same in the two periods. The results of the Chow test for the conventional demand deposit are shown in Table 6.4 below:

Table 6.4
The conventional demand deposit equations

Coefficients	1983 - 2001	1983 - 1991	1992 - 2001
Intercept	-4.72409	-8.55659	-3.03371
LGDRL	1.17539	1.82959	0.91973
LRD	0.27310	0.00841	0.26306
LCPI	-0.12451	-0.06666	0.59704
LAG1DDC	0.52913	0.12158	0.02898
R^2	0.9861	0.9851	0.9590
Standard Error	3.27606	2.15866	1.97507
Sum of Squares	0.07196	0.01199	0.01375

New Jersey: USA, 2000, pp. 287-289.

(2) Conventional time deposit ($LTDC_t$)

$$F[5,9]=\frac{(0.02916-0.00176-0.00944)/5}{(0.00176+0.00944)/(9+10-10)}=2.88$$

At the critical value of 4.25, we would accept the hypothesis that the parameters are the same in the two periods. The results for the Chow test for the conventional time deposit are shown in Table 6.5 below:

Table 6.5
The conventional time deposit equations

Coefficients	1983 - 2001	1983 - 1991	1992 - 2001
Intercept	-2.95734	-3.96577	-1.76081
LGDRL	1.72673	1.17444	1.79359
LRT	0.34989	0.35848	0.32733
LCPI	-0.13618	-0.21686	-0.42234
LAG1TDC	0.14946	0.24362	0.01709
R^2	0.9941	0.9972	0.9769
Standard Error	1.97012	2.85739	0.81293
Sum of Squares	0.02916	0.00176	0.00944

(3) Islamic demand deposit ($LDDI_t$)

$$F[5,9]=\frac{(1.30852-0.01198-0.67483)/5}{(0.01198+0.67483)/(9+10-10)}=1.62$$

At the critical value of 4.25, we would accept the hypothesis that the parameters are the same in the two periods. The results of the Chow test for the Islamic demand deposit are shown in Table 6.6 below:

Table 6.6
The Islamic demand deposit equations

Coefficients	1983 - 2001	1983 - 1991	1992 - 2001
Intercept	-3.52172	-1.80276	-1.09321
LGDRL	0.68953	0.18439	0.81866
LSPSD	1.32398	0.91760	1.16255
LCPI	-0.63591	-0.07896	-2.05521
LAG1DDI	0.74951	0.54126	0.34206
R^2	0.9608	0.9697	0.9071
Standard Error	1.90781	1.46685	1.45567
Sum of Squares	1.30852	0.01198	0.67483

(4) Islamic time deposit ($LTDI_t$)

$$F[5,9]=\frac{(1.39168-0.02374-0.60715)/5}{(0.02374+0.60715)/(9+10-10)}=2.17$$

At the critical value of 4.25, we would accept the hypothesis that the parameters are the same in the two periods. The results of the Chow test for the Islamic time deposit are shown in Table 6.7 below:

Table 6.7
The Islamic time deposit equations

Coefficients	1983 - 2001	1983 - 1991	1992 - 2001
Intercept	-3.67298	-6.37365	-1.95136
LGDRL	0.65856	0.59933	9.13367
LSPST	1.25265	0.37827	1.73418
LCPI	-0.26231	-0.64628	-3.92560
LAG1TDI	0.77640	0.66827	0.36288
R^2	0.9289	0.9100	0.8696
Standard Error	1.93061	2.57105	1.33289
Sum of Squares	1.39168	0.02374	0.60715

(5) Islamic investment deposit ($LIID_t$)

$$F[5,9] = \frac{(1.87442 - 0.02884 - 0.60234)/5}{(0.02884 + 0.60234)/(9+10-10)} = 3.54$$

At the critical level of 4.25, we would accept the hypothesis that the parameters are the same in the two periods. The results of the Chow test for the Islamic investment deposit are shown in Table 6.8 below:

Table 6.8
The Islamic investment deposit equations

Coefficients	1983 - 2001	1983 - 1991	1992 - 2001
Intercept	-3.74358	-6.99212	-7.24222
LGDRL	0.24267	0.91472	2.51403
LIPS	1.71882	1.00055	3.28995
LCPI	-0.71986	0.10786	-1.03795
LAG1IID	0.75872	0.66453	0.34985
R^2	0.9436	0.9554	0.9527
Standard Error	2.63172	3.23172	2.13950
Sum of Squares	1.87442	0.02884	0.60234

The Chow test results above show that all behavioural equations used in this model are stable throughout the research period for the conventional demand deposit, conventional time deposit, Islamic demand deposit, Islamic time deposit and Islamic investment deposit. Therefore, all of the equations should accept the null hypothesis. This means that there is no change in the parameter values at the significant level of 10 per cent.[15] This is demonstrated in Table 6.9.

---

[15] Ibid., pp. 287-289.

Table 6.9
Chow test for structural change, 1983 – 2001

Model	F^c	Adjusted R^2
Conventional demand deposit	3.23	0.9814
Conventional time deposits	2.88	0.9921
Islamic demand deposit	1.62	0.9477
Islamic time deposit	2.17	0.9052
Islamic investment deposit	3.54	0.9248

Note: F^C is the Chow test statistics. The value of the *F*-statistic at the 10% significance level for the whole equation is 4.25.

This study finds that both the conventional and the Islamic banks deposits are stable. However, the Islamic demand deposit and Islamic time deposit are more stable than the conventional demand deposit and conventional time deposit (this is measured through the value of the Chow test (F^c), which is smaller for the Islamic demand and time deposits than for the conventional demand and time deposits (see Table 6.9). There may be several reasons for this, such as:

(1) The Malaysian government is using more, and depending completely on conventional monetary and fiscal developments policies as a whole in their efforts to achieve monetary and price stability, economic growth, development in the financial market, money supply growth and so on, as compared to the Islamic financial instruments. This can be seen from the statement of the Bank Negara Malaysia in their *Annual Reports 2000*, p. 10, which says that;

> "Growth in the money supply decelerated sharply as credit growth slowed down rapidly in an environment of sluggish economy activity; weak business prospects; lower private consumption; as well as more cautious lending policies of banking institutions amidst rising non-performing loans (NPLs). Against this background, monetary policy evolved according to the changing conditions during the course of the year to address emerging risks and challenges, with the aim of maintaining overall macroeconomic stability. In achieving this objective, Bank Negara Malaysia (BNM) relied on a combination of interest rate, prudential and structural measures."[16]

(2) The excess of liquidity characteristics of Bank Islam Malaysia Berhad, Bank Muamalat Malaysia Berhad, and of the other financial instruments in Malaysia. This is happening for several reasons, namely: (a) the growth of deposits in Islamic banking far exceeds the demand for Islamic financing, especially during the period 1983 to 1992; (b) there is an inadequate numbers of Islamically-acceptable investment outlets, especially before the year 1992; (c) Bank Islam Malaysia Berhad, Bank Muamalat Malaysia

[16] Bank Negara Malaysia, *Annual Reports*, Monetary Policy and Fiscal Developments, 2000, p. 10.

Berhad and other financial instruments remain profitable because of their low level of risk exposure and they are pursuing of a conservative financing policy despite excess liquidity;

(3) The Islamic banks' policy is also implemented upon a policy of conservatism and is rooted in underlying observations such as: (a) severe losses that signal the failure of the philosophy and the implementation of Islamic banking and financial instruments; and (b) the nature of Islamic contracts undertaken are mostly based on profit-sharing and trade financing rather than on the profit-loss sharing system. This means that the deposits and investments of the depositors in the Islamic banking and financial instruments are guaranteed by the bank and the government. This finding supports those of Hassan (1996)[17] and Kaleem (2000),[18] but disagrees with the findings of Darrat (1988),[19] Khan (1985),[20] and Ahmad & Khan (1990),[21] who have found that Islamic banking is stable and is more crisis proof than conventional banking. However, Yousefi, Abizadeh & Mccormick (1997),[22] in their study on monetary stability and interest-free banking, conclude that a case for the superiority of Islamic banking has, certainly in the case of Iran, not been made.

6.4.2 That the correlation between Islamic banks deposits and the monetary base demand function is stronger than that between conventional deposits and the monetary base demand function

The objective here is to discuss and assess the relative effectiveness of and differences between profit-sharing and interest-bearing deposits in the formation of monetary policy. Darrat (1988) suggests two prerequisites for policy usefulness which may used to check the performance of both the Islamic and the conventional financial instruments. The first is the effective control of the monetary authorities over their financial instruments. Secondly, there should be a strong and reliable relationship between the monetary instruments and the main goal of the monetary authority. A test

---

[17] M. K. Hassan, *Stability of money demand under an interest-free versus an interest-based banking system*, University of New Orleans, New Orleans: USA, 1996, pp. 11-13.

[18] A. Kaleem, Modelling monetary stability under a dual banking system: The case of Malaysia, *International Journal of Financial Services*, Vol. 2, No. 1, 2000, pp. 9-11.

[19] Darrat, A. F, The Islamic interest-free banking system: Some empirical evidence, *Applied Economics*, Vol. 20, 1988, pp. 422-424.

[20] Khan, A, The demand for money in Pakistan: Some further results, *Pakistan Development Review*, Vol. 19, 1980, pp. 47-49.

[21] Ahmad, M, and Khan, A. H, A reexamination of the stability of the demand for money in Pakistan, *Journal of Macroeconomics*, Vol. 12, 1990, pp. 315-321.

[22] M. Yousefi, S. Abizadeh and K. Mccormick, Monetary stability and interest-free banking: the case of Iran, *Applied Economics*, Vol. 29, 1997, pp. 874-875.

of the link between profit-sharing deposits and interest-based deposits and the monetary base, may be divided into two parts.[23] This is shown below:

a) <u>The empirical estimation of interest-based deposits and monetary base demand function</u>

$$(1)\quad DDC_t = \underset{(5.192)}{19.4783} + \underset{(14.348)}{0.8286}^{***}(MB_t) \qquad (6.6)$$

$R^2 = 0.9279$ Adj R-sq = 0.9234

$$(2)\quad TDC_t = \underset{(5.357)}{19.7129} + \underset{(17.093)}{0.4518}^{***}(MB_t) \qquad (6.7)$$

$R^2 = 0.9481$ Adj R-sq = 0.9448

b) <u>The empirical estimation of profit-sharing deposits and monetary base demand function</u>

$$(3)\quad DDI_t = \underset{(-1.607)}{-77.2470} + \underset{(6.826)}{0.0505}^{***}(MB_t) \qquad (6.8)$$

$R^2 = 0.7444$ Adj R-sq = 0.7284

$$(4)\quad TDI_t = \underset{(-0.773)}{-76.6867} + \underset{(8.341)}{0.0293}^{***}(MB_t) \qquad (6.9)$$

$R^2 = 0.8130$ Adj R-sq = 0.8013

$$(5)\quad IID_t = \underset{(-2.230)}{-93.3807} + \underset{(6.095)}{0.1653}^{***}(MB_t) \qquad (6.10)$$

$R^2 = 0.6989$ Adj R-sq = 0.6801

Note: T statistics are in parentheses

The above regression result section develops the relationship between the financial instruments and monetary authority controllability. By following the methodology of Darrat and Hassan, we would like to determine whether the monetary authorities have

[23] Darrat, A. F., 1988, op. cit., pp. 419-420.

more control over Islamic or over conventional financial instruments in Malaysian banks deposits. The equations (6.6) to (6.10) and Table 6.10 demonstrate the results.

Table 6.10
The relationship between monetary base and the interest-based deposits and profit-sharing deposits dependent variables

Dependent variables	Constant	*t* Statistics	Monetary base (MB_t)	Adjusted R^2
Conventional demand deposit	19.4783	14.348	0.8286	0.9234
Conventional time deposit	19.7129	17.093	0.4518	0.9448
Islamic demand deposit	-77.2487	6.826	0.0505	0.7284
Islamic time deposit	-76.6867	8.341	0.0293	0.8013
Islamic investment deposit	-93.3807	6.095	0.1653	0.6801

Table 6.10 defines the relationship between the growth of financial instruments and the rate of growth of monetary instruments, covering both Islamic and conventional financial instruments. The regression results reveal several findings:

i) The monetary authorities have a significantly higher level of control over conventional banks deposits than over Islamic banks deposits. This can be seen from the value of *t* statistics for the monetary base (MB_t). The values of *t* statistics for DDC_t, and TDC_t are 14.348 and 17.093 respectively, and are higher compared to the Islamic deposits DDI_t, TDI_t, and IID_t, which are 6.826, 8.341, and 6.095.

ii) The results also show that conventional deposits are highly significant as compared to Islamic deposits, as their *coefficients* are 0.8286, 0.4518 for DDC_t and TDC_t, whereas the *coefficients* for Islamic deposits are 0.0505, 0.0293 and 0.1653 respectively.

iii) Similarly, the regression results show that conventional deposits exhibit a strong relationship between the dependent variables and the independent variables compared to Islamic deposits. This can be seen by the fact that the values of adjusted R^2 for conventional deposits are higher than for Islamic deposits (where adjusted R^2 for DDC_t = 0.9234, TDC_t = 0.9448; while adjusted R^2 for DDI_t = 0.7284, TDI_t = 0.8013, and IID_t = 0.6801).

Table 6.10 displays the regression results for both the Islamic banks deposits and conventional deposits. The results for both the conventional demand and time deposits unambiguously suggest that the growth of interest-based deposits correlates more closely with the growth in monetary base than does the growth of the profit-sharing deposits. In particular, the sizes of adjusted R^2 show that the growth in the base money explains about 92 and 94 per cent of total variations in the interest-based deposit growth. Conversely, the sizes of adjusted R^2 show that the growth in the base money explains about 72, 80 and 68 per cent of total variations in the profit-sharing deposits growth. In addition, the degrees of responsiveness of the two conventional deposits (demand deposit and time deposit) to response (elasticities) with the monetary base are also

distinctly different. Every 10 per cent increase in the growth rate of the monetary base leads to an almost 8 per cent and 5 per cent increase in the growth of conventional and time deposits, however, a similar 10 per cent increase in monetary base growth will only result in an almost 0.5 per cent, 0.2 per cent and 1 per cent increase in the growths of Islamic demand deposit, Islamic time deposit and Islamic investment deposit respectively.

The above regression results and findings show that there is a high level of control over conventional monetary instruments compared to Islamic monetary instruments. This is consistent with the studies Hassan (1996)[24] and Yousefi, Abizadeh & Mccormick (1997),[25] who found that the conventional money demand has a strong relationship with, or more controllability by monetary authorities than the Islamic money demand. This finding, however, contradicts with those of previous studies by Darrat (1988)[26] and Kaleem (2000).[27] The above results and conclusion show the strong relationship between interest-based deposits and monetary base, thus allowing the monetary authorities to have a more direct control over the conventional deposits, which in turn will have an impact on other macroeconomics variables. These results also indicate that the conventional monetary instruments play a more important role than Islamic monetary instruments in the Malaysian economy, in conformity with the observations of Rodney Wilson in his article *Islam and Malaysia's economic development*, that:

> "Islam is likely to be a continuing factor influencing politics, but as far as Malaysian development is concerned, the influence of conventional economics on Islam may be greater than the impact of Islam on economy policy." [28]

To conclude, the regression analyses suggest that the interest-based deposits in Malaysia exhibit a stronger and more reliable relationship with policy instruments. These results suggest that the interest-based monetary system provides policy-makers in Malaysia with an effective monetary control environment.

---

[24] M. K. Hassan, *Stability of money demand under an interest-free versu s an interest-based banking system*, University of New Orleans, New Orleans: USA, 1996, p. 10.
[25] M. Yousefi., S. Abizadeh and K. Mccormick, Monetary stability and interest-free banking: the case of Iran, *Applied Economics*, Vol. 29, 1997, pp. 874-875.
[26] Darrat, A. F, The Islamic interest-free banking system: some empirical evidence, *Applied Economics*, Vol. 20, 1988, p. 423.
[27] Ahmad, Kaleem, Modeling Monetary Stability under a Dual Banking System: The Case of Malaysia, *International Journal of Islamic Financial Services*, Vol. 2, No. 1, 2000, p. 10.
[28] Rodney Wilson, Islam and Malaysia's Economic Development, *Journal of Islamic Studies*, Vol. 9, Issue 2, Oxford University Press, London: UK, 1998, p. 276.

6.4.3 That the velocity of the Islamic bank deposits (profit-sharing) is more stable than the velocity of conventional deposits (interest-based)

The velocity of money plays a crucial role in contemporary macroeconomic analysis and the stability of velocity represents a necessary requirement for effective monetary policy.[29] A major objective of monetary policy is to achieve price stability and low unemployment in the economy. This can be achieved through the stability of velocity over time, because an unstable velocity will weaken the link between monetary policy and the rest of the economy. In addition, an unstable velocity could affect overall economic and financial stability adversely, as a result of the inability accurately to predict the velocity of money, which may deepen the cycles of high unemployment and high inflation. Therefore, having a stable and smooth velocity of money is vital for prudent monetary policy-making and for the good shape of the economy.

As discussed above, the interest-based deposits include demand deposits and time deposits in commercial banks, including those that provide Islamic banking instrument counters, while the profit-sharing deposits include demand deposit, time deposit and investment deposits in Islamic banks and other financial institutions which provide Islamic banking counters or vendors. The variance[30] of the velocity of a particular type of money velocity will indicate the stability of the deposits for that type of money.

The models for both types of deposit are shown below:

(a) <u>The interest-bearing deposits model</u>.

(1) $VMDDC_t = GDP_t / DDC_t$ (6.11)

(2) $VMTDC_t = GDP_t / TDC_t$ (6.12)

(b) <u>The profit-sharing deposits model</u>.

(1) $VMDDI_t = GDP_t / DDI_t$ (6.13)

(2) $VMTDI_t = GDP_t / TDI_t$ (6.14)

(3) $VMIID_t = GDP_t / IID_t$ (6.15)

---

[29] Munawar Iqbal, *Islamic Banking and Finance: Current Development in Theory and Practice*, Islamic Foundation, Leicester: UK, 2001, p. 326.
[30] See the meaning of variance in Chapter Five, p. 174.

Where;

$VMDDC_t$ = the velocity of the conventional demand deposits at time t

$VMTDC_t$ = the velocity of the conventional time deposits at time t

$VMDDI_t$ = the velocity of the Islamic demand deposits at time t

$VMTDI_t$ = the velocity of the Islamic time deposits at time t

$VMIID_t$ = the velocity of the Islamic investment deposits at time t

GDP_t = the nominal gross domestic product at time t

DDC_t = the conventional demand deposits at time t

TDC_t = the conventional time deposits at time t

DDI_t = the Islamic demand deposits at time t

TDI_t = the Islamic time deposits at time t

IID_t = the Islamic investment deposits at time t

The results of the analysis of variance carried out to investigate if the velocity of profit-sharing deposits is more stable than the velocity of interest-bearing deposits is shown in Table 6.11 below:

Table 6.11
Summary statistics of variances of velocity of money

Variables	Variances
Velocity of conventional demand deposits	2.67
Velocity of conventional time deposits	5.06
Velocity of Islamic demand deposits	93.97
Velocity of Islamic time deposits	122.04
Velocity of Islamic investment deposits	35.55

Table 6.11 shows that the results were consistent for both the conventional and Islamic banks deposits. The variances of the velocity for conventional deposits were lower than the variances for the Islamic banks deposits. The variances for the velocity of the conventional demand deposits and conventional time deposits are 2.67 and 5.06 respectively; this is lower than the variances of the velocity of the Islamic demand deposits, Islamic time deposits and Islamic investment deposits, which have variance values of 93.97, 122.04 and 35.55 respectively.

These results contradict the findings of Darrat (1988)[31] and Hassan (1996),[32] who reported that it was the interest-free money that was more stable than the interest-bearing money. However, these results support the study by Yousefi, Abizadeh & Mccormick (1997), which found that the velocity of money in conventional banking was much less volatile, the demand for money balance was stable, and price stability

[31] Darrat, A. F., op. cit., p. 423.
[32] M. K. Hassan., op. cit., p. 8

prevailed compared with a less stable situation in Islamic banking in the case of Iran.[33] Generally speaking, according to this study, it was found that in the Malaysian banking deposits, the velocity of conventional deposits is more stable than that of Islamic banks deposits.

In order to discuss these issues in more detail, we can compare the velocity of the interest-based deposits with that of the interest-free deposits, as illustrated in Figures 6.4a and 6.4b. From Figure 6.4b, the velocity of the interest-free deposits for DDI, TDI and IID fell from highs of 828.60, 563.55 and 277.34 respectively in 1983 to lows of 28.34, 38.49 and 8.07 respectively in 2001. These three interest-free deposits have undergone dramatic fluctuations over the years.

In contrast, statistics for the velocity of the interest-based deposits (DDC and TDC) reveal a smoother behaviour. In the case of DDC, velocity ranges from a peak of 7.95 in 1983 to a trough of 1.93 in 2001. Therefore, the velocity of interest-based deposits in Malaysia also shows a smoother pattern than the velocity of the interest-free deposits over the study period. In fact, the velocity of the interest-based deposits for TDC is better behaved, varying only between 7.45 in 1983 as the peak, to 3.33 in 2001 as the trough. In addition, the variability of the velocity of the interest-free deposits is much higher than that of the velocity of the interest-based deposits in Malaysia.

To conclude, the preceding analysis suggests that the velocity of the interest-based deposits is less volatile than that of the interest-free deposits in Malaysia. Therefore, we may say that an interest-based banking system promotes and plays an important role in financial and economic stability in Malaysia since it apparently reduces instability in the underlying velocity of money, thus providing monetary authorities in Malaysia with an environment more conducive to the conducting of effective monetary and macroeconomic policies.

---

[33] Yousefi, Abizadeh, & Mccormick., op. cit., p. 875.

Figure 6.4a: Velocity of Interest-Based Deposits in Malaysia, 1983-2001

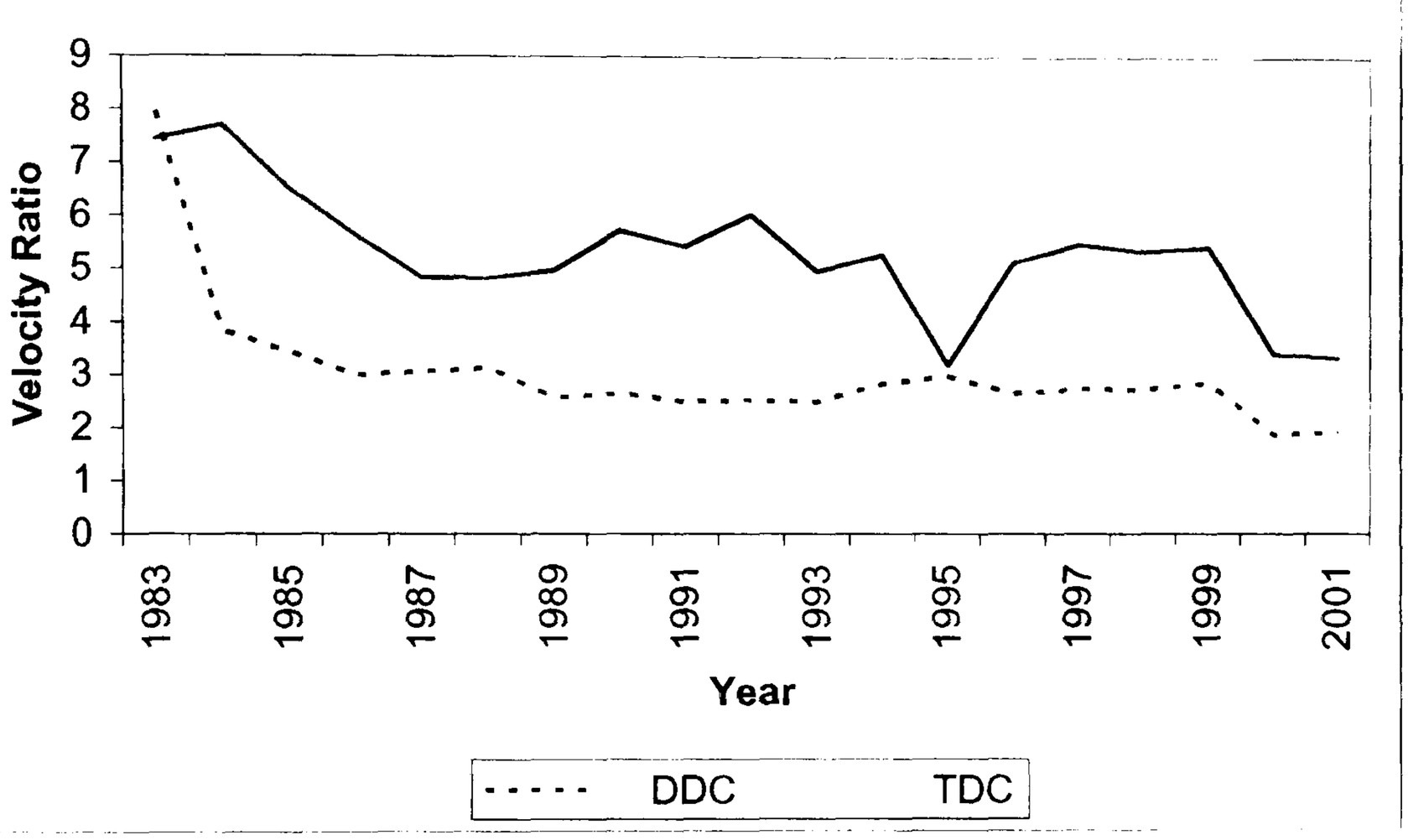
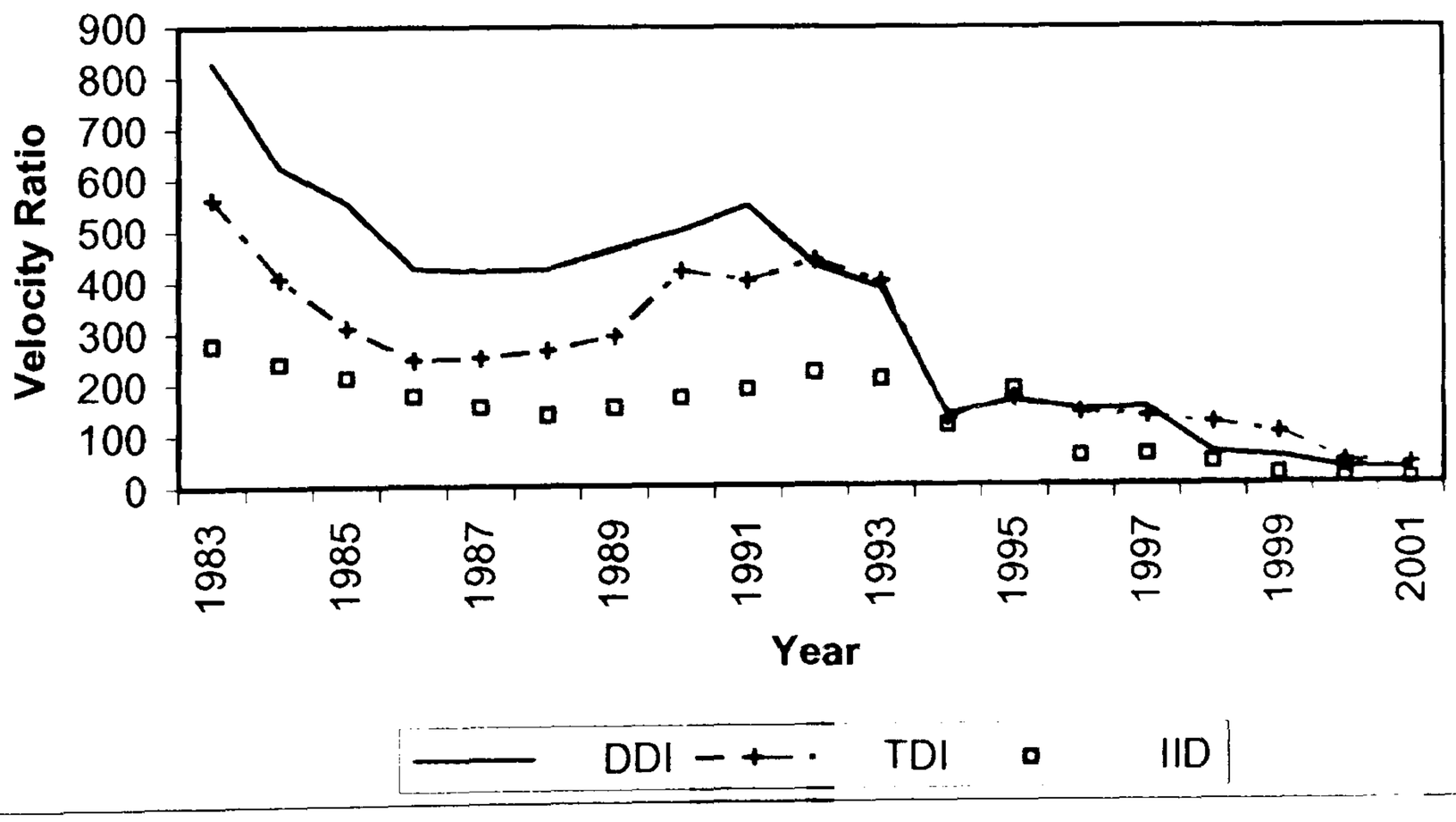


Figure 6.4b: Velocity of Profit-Sharing Deposits in Malaysia, 1983-2001



6.5 DIAGNOSTICS TEST

To test whether there was *multicollinearity*[34] or not, we will use the *Pearson Correlation Coefficient Test* as explained below:

Pearson Correlation Coefficient Test

The *Pearson Correlation Coefficient Test* is relevant, in order to ascertain whether *multicollinearity* or *collinearity* is present in the regression model. We would like to test the problem of *multicollinearity* because increasing correlation between explanatory variables inflates the standard errors beyond those that would pertain in the orthogonal case. However, if the explanatory variables are uncorrelated, the sampling variances are reduced to those for the simple regression of Y on X_2 and Y on X_3. In addition, the more similar the *Xs* are, the more imprecise is the attempt to estimate their relative effects. This situation is referred to as *multicollinearity* or *collinearity*. That means, with perfect or exact *collinearity*, the standard errors go to infinity. Exact *collinearity* means that the columns of 'X' are linearly dependent, and so the *Least Square* vector cannot be estimated.[35]

The results of the *Pearson Correlation Coefficient Test* are reported in Table 6.12 as below.

From Table 6.12 we can see that no exact linear relationship exists between any of the independent variables in the model or in the sample values. Therefore we should expect that no *multicollinearity* is present between the independent variables in the model. This is also because R^2 in the regression is higher than R^2 calculated in the *Pearson Correlation Coefficient Test*, which means that we accept Rho=0 ($r = 0$).[36]

---

[34] The term *multicollinearity* was coined by Ragnar Frisch. Originally it meant the existence of a "perfect", or exact, linear relationship among some or all explanatory variables of a regression model.
[35] Jack Johston & John DiNardo, *Econometric Methods*, 4th Edition, The McGraw-Hill Companies, Inc, New York: USA, 1997, pp. 88-89.
[36] Robert S. Pindyck & Daniel L. Rubinfeld, *Econometric Models and Economic Forecasts*, 3rd Edition, McGraw-Hill, INC, New York: USA, 1991, pp. 83-85.

Table 6.12
The results of the multicollinearity test through the *Pearson Correlation Coefficient Test*

Variables	*Pearson Correlation Coefficient Test*	R^2
	Model $lnDDC_t$	
$lnGDRL_t$, $lnRD_t$	0.39336	0.9861
$lnGDRL_t$, $lnCPI_t$	-0.70934	
$lnGDRL_t$, $lnDDC_{t-1}$	0.83727	
$lnRD_t$, $lnCPI_t$	-0.40196	
$lnRD_t$, $lnDDC_{t-1}$	0.28560	
$lnCPI_t$, $lnDDC_{t-1}$	-0.69213	
	Model $lnTDC_t$	
$lnGDRL_t$, $lnRT_t$	0.59137	0.9941
$lnGDRL_t$, $lnCPI_t$	-0.41747	
$lnGDRL_t$, $lnTDC_{t-1}$	0.68146	
$lnRT_t$, $lnCPI_t$	-0.35304	
$lnRT_t$, $lnTDC_{t-1}$	0.40243	
lnCPIt , $lnTDC_{t-1}$	-0.64345	
	Model $lnDDI_t$	
$lnGDRL_t$, $lnSPSD_t$	0.83720	0.9608
$lnGDRL_t$, $lnCPI_t$	-0.22452	
$lnGDRL_t$, $lnDDI_{t-1}$	0.74027	
$lnSPSD_t$, $lnCPI_t$	-0.44097	
$lnSPSD_t$, $lnDDI_{t-1}$	0.80339	
$lnCPI_t$, $lnDDI_{t-1}$	-0.25686	
	Model $lnTDI_t$	
$lnGDRL_t$, $lnSPST_t$	0.88364	0.9289
$lnGDRL_t$, $lnCPI_t$	-0.66992	
$lnGDRL_t$, $lnTDI_{t-1}$	0.75097	
$lnSPST_t$, $lnCPI_t$	-0.42302	
$lnSPST_t$, $lnTDI_{t-1}$	0.82675	
$lnCPI_t$, $lnTDI_{t-1}$	-0.22682	
	Model $lnIID_t$	
$lnGDRL_t$, $lnIPS_t$	0.83387	0.9436
$lnGDRL_t$, $lnCPI_t$	-0.68199	
$lnGDRL_t$, $lnIID_{t-1}$	0.86437	
$lnIPS_t$, $lnCPI_t$	-0.74208	
$lnIPS_t$, $lnIID_{t-1}$	0.78598	
$lnCPI_t$, $lnIID_{t-1}$	-0.43644	

6.6 SUMMARY AND CONCLUSIONS

The primary objective of this research was to develop an econometric model and to determine the main factors which influenced the conventional deposits and the Islamic banks deposits in Malaysia. In addition, this study also empirically examined and tested the alleged superiority of Islamic banking over conventional banking.

An empirical analysis of Tunisian banking by Darrat (1988) previously supported this superiority. However, the study by Hassan (1996) of 15 Islamic countries divided

into five sub-groups - the whole sample, Arabian Gulf countries, Asian countries, African countries and other countries - produced mixed results, partially confirming Darrat's conclusions and partially not. Darrat and Hassan were treating M1 as a proxy for the occurrence of Islamic banking and M2 as a proxy for the prevalence of the conventional (Western) banking practices.

Darrat's findings suggested that under Islamic banking, the velocity of money was much less volatile, the demand for money balances was stable and price stability prevailed, in contrast to the situation in conventional banking. Hassan, however, found weak support for the stability of the Islamic money demand and the strength of relationship with the monetary base compared to the conventional money demand, but support for Darrat's finding that the velocity of interest-free money is more stable than the velocity of interest-bearing money.

Our point of departure was that in Tunisia, at the time they were conducting their studies, there was no history of Islamic banking, so the assertion of the relative stability of Islamic banking determined by the stability of M1 in Tunisia must be questionable. In addition, Hassan's study of the 15 Islamic countries is unreliable because of potential problems in the empirical work that may arise concerning the relative stability of the interest-free compared to the interest-based money demand in those countries that apply a dual banking or a mixed banking system, except for Iran and Pakistan.

Therefore, as our basic premise was to demonstrate the relative stability of Islamic banking, a researcher would need either to: (i) develop an econometric model appropriate for the real situation of the banking system of country in question, (ii) compare the stability of alternative banking systems in that country (e.g. the stability of conventional deposits compared to the Islamic banks deposits). Here, we chose Malaysia, a country that has implemented Islamic banking in a dual banking system, as our object of analysis. In this study, we modified Darrat's and Hassan's model to suit Malaysia. Our work produced mixed evidence, partially confirming Darrat's and Hassan's conclusions and partially contradicting them.

As we know, the previous studies carried out by Darrat (1988), Ahmad & Khan (1990), Hassan (1996), and Kaleem (2000) were all based on money supply or monetary aggregates (M1 and M2). Therefore, it is likely that one might discover the associated financial stability of M1 and M2 differing in all countries, whether Islamic or conventional. The implication in this study is that M1 velocity varies with the variability of the interest rate. From this factor we may infer that the development of Islamic banking is an aspect of the tightening of financial regulations, would reduce the

velocity of M1. However, in this study we are using banks deposits instead of money supply, and this really shows that the velocity of conventional deposits in Malaysia is more stable and less volatile than that of Islamic banks deposits.

Finally, on the basis of the above arguments and the empirical evidence presented in this study, we can conclude that there is no case to be made for the superiority of Islamic banking in Malaysia. Therefore, in this study, no proof has been found that Islamic banking is better than conventional banking. Moreover, according to this research, the implementation of Islamic banking in Malaysia is not very different from conventional or western banking.

In addition, our arguments are based on two main principles or rules, first of all, the prohibition of *riba, gharar* and *maisir*. Second, to avoid *riba*, in Islamic banking profit- and loss-sharing has been presented as an alternative method of financing. The majority of Islamic scholars agreed on the two main modes of profit-loss sharing (PLS), which are joint ventures and trust financing for the operations of Islamic banking. The operations of Islamic banking in Malaysia should be based on these two contracts. However, we have seen that the reality is different, and that Islamic banking in Malaysia has failed to base its financing operations on the concept of profit-and loss-sharing.

The main methods of financing remain profit-sharing and trade-financing, which are predictable and low-risk. Therefore, their popularity is mainly due to the risk-aversion of Islamic banks; however, one of the aims of Islamic banking is to develop Malaysian economies by risk-sharing between partners. Thus, the operations of Islamic banking in Malaysia do not fully assume their responsibility according to the *Shari'ah* Law and Jurisprudence.

Furthermore, it is interesting to note that the main challenge for Islamic banking in Malaysia is to find more successful methods of medium- and long-term financing which are based on the profit- and loss-sharing (PLS) system.

CHAPTER SEVEN

CONCLUSION, COMMENTS AND FUTURE PROSPECTS FOR RESEARCH

7.1 INTRODUCTION

The discussion in this chapter will be focused on a summary of the research, implications for policies, and a summary of and comments on the Malaysian Islamic banking system. Several suggestions will be put forward regarding future research into the Islamic banking and financial system of Malaysia. It will also be shown that the performance of the econometric model as used in this research was satisfactory. This can be seen from the results of the simulation and the *Theil's test of inequality coefficient* (U statistics).

7.2 SUMMARY OF THE RESEARCH

The objective of this thesis was to examine the main of variables, and the stability and efficiency of the Islamic monetary instruments pertaining to the Malaysian dual banking system. To achieve this, the 1983 - 2001 annual time series data on Malaysian banking institutions were used. In addition, the ordinary least square (OLS) econometric technique was applied. An empirical methodology similar to that closer of Darrat[1] and that of Hassan[2] was used, although notably Hassan's result fails to support the Darrat studies. The main aims of this study have been:

(1) To develop the conventional and the Islamic bank deposits model with the same explanatory variables, with regard to the financial instruments used in the Islamic banks and conventional bank in Malaysian dual banking system;

(2) To analyse the demand for money with regard to the conventional and Islamic bank deposits model instruments; and

(3) To compare the effectiveness and flexibility of both financial instruments. For the analysis, we replicate and further develop Hassan's (1996) methodology.

As a whole, the equation for the model reflects the money deposits of the Islamic and conventional banks in Malaysia. With regard to the conventional money deposits

---

[1] Darrat, A. F, The Islamic interest-free banking system: Some empirical evidence, *Applied Economics*, Vol. 20, 1988, pp. 417-425.

[2] M. K. Hassan, Stability of money demand under an interest-free versus an interest-based banking system, University of New Orleans: USA, 1996, pp. 1-15.

(conventional demand and conventional time deposits), the research results show that the real gross domestic product, the interest rate, the consumer price index and the conventional demand and conventional time deposits lagged for one year are important factors in explaining the changes in the conventional demand and conventional time deposits. In addition, the research shows the important contribution made by the real gross domestic product and the interest rate to the conventional demand and conventional time deposits, meaning that the total amount of conventional demand and conventional time deposits are influenced quite significantly by the real gross domestic product.

This also means people have more money to save. It seems that there is a clear correlation between macroeconomic performance (real gross domestic product) and the performance of the conventional banks (conventional deposits). This can be seen from the values of elasticity for the conventional demand deposits and conventional time deposits against the real gross domestic product, which were 1.1753 and 1.7267 respectively.

This means that, for a 1 per cent increase in the real gross domestic product, conventional demand deposits and conventional time deposits will increase by 1.1753 and 1.7267 respectively. Therefore, practical steps to increase demand deposits and time deposits should be taken by both corporate funds and ordinary people. In addition, the interest rates of demand deposits and time deposits need to be at such a level that depositors are able to derive a decent income from them.

The research has also shown how real gross domestic product, profit-share (rate of return to depositors), the consumer price index and the dependent variables lagged for one year are important factors in explaining the Islamic demand deposits, Islamic time deposits and Islamic investment deposits. However, the profit-share (rate of return to depositors) is highly significant in relation to the Islamic demand deposits, Islamic time deposits and Islamic investment deposits. This can be seen from the values of elasticity for the Islamic demand deposits, Islamic time deposits and Islamic investment deposits, which were 1.3905, 1.2526 and 1.7188 respectively in relation to the profit-share (significant at the 1 per cent, 10 per cent and 5 per cent level respectively).

7.3 IMPLICATIONS FOR POLICY

On the basis of the research findings, we are able to formulate some suggestions for the bankers, banking institutions and policy makers regarding a number of important

policies that should be considered by the Malaysian banking industry in general. Among the policies that should be given some attention are:

7.3.1 Sustainable development in the economic sphere of the country

The conventional and Islamic banking industry contributes significantly to banking industry funds, to the investment of these funds, and to the socio-economic development of Malaysia. In order to ensure the survival and continued growth of the banking industry in Malaysia, several steps should be taken. This research provides empirical evidence that the real gross domestic product, the interest rate and the profit-share play important roles in the Malaysian banking industry. Therefore, sustainable development in the economic sphere is highly significant in increasing the income of the people, and thus in increasing the demand, time and investment deposits made by depositors in either conventional or Islamic banking.

7.3.2 The interest rate and the profit-share need to be at levels where they can attract depositors to deposit their money in either conventional or Islamic banks

The aim is to attract more depositors to both conventional and Islamic banking, so a reasonable interest rate and profit-share will help to define the deposit environment in the conventional and Islamic banking industry. The research shows that interest rate and profit-share are important factors in relation to the money demand in both conventional and Islamic banking, especially with regard to the Islamic demand deposits, Islamic time deposits and Islamic investment deposits, which are influenced by the ratio of profit-sharing (rate of return to depositors). This can be seen from the elasticity values of the Islamic demand deposits, Islamic time deposits and Islamic investment deposits with respect to the profit-share, which were 1.3905, 1.2526 and 1.7188 respectively.

7.3.3 Upgrade development activities to ensure that modern technology, security design and management practices can be applied

Development activities must be upgraded to ensure that modern technology, security design and management practices can be applied, not only in the Islamic banking system but also with other financial institutions. This can also be accomplished by the provision of suitable incentives through the implementation of an appropriate

government policy that involves the application of modern technological and management practices.

7.3.4 Increase the number of Islamic vendors

The government and the Islamic banking operator should increase the numbers of Islamic banking vendors, branches and counters that are available to the people, in order to encourage more depositors to deposit their money in Islamic banks. Thus practical measures for increasing total Islamic investment deposits, whether in Islamic banks or other conventional banks which provide Islamic vendors and counters, would be to optimise the use of currently available counters and management, and to improve management style by using the latest technological procedures.

7.4 THE SIMULATION BEHAVIOUR

To discuss the simulation behaviour for both conventional and Islamic banks deposits, we used three main criteria from our results. They are as follows:

(a) The results of RMSE and RMSPE show that the deviation of the simulated variable from its actual time path is smaller for the conventional deposits than for Islamic banks deposits. The values of RMSE and RMSPE for the conventional demand deposits and conventional time deposits were 0.0746 and 0.6889, and 0.0398 and 0.3897 respectively, whereas the values for the RMSE and RMSPE for the Islamic demand deposits, Islamic time deposits and Islamic investment deposits were 0.2737 and 2.4623, 0.2845 and 2.6979 and 0.2956 and 3.0664 respectively. These results show that the conventional deposits are more closely and correctly related to the explanatory variables in the model compared to the Islamic banks deposits. In other words, the conventional deposits models accurately reflect the real economic situation in Malaysia.

(b) The results of applying the *Theil's Inequality Coefficient* (*U* statistics) to measure the accuracy of the model and to evaluate the historical simulations or ex-post forecasts also show that the conventional deposits are better than the Islamic banks deposits; because the simulated values can track the actual values of dependent variables more closely. These measurements can be divided into three main proportions called the U^M, U^S and U^C. U is used to measure the forecasting accuracy by means of a comparison between simulation values (Y^s_t) and actual values (Y^a_t) of endogenous variables.

The results (see Table 6.3b, p. 194) show that the conventional deposits are more accurate for forecasting purposes than the Islamic banks deposits. However, the results for the U^M used to measure the bias proportion of both models show that neither model has a bias proportion. This means that the variables used in the model truly represent the real economic situation and environment in Malaysia.

The U^S is the variance proportion used to measure the ability of the model to replicate the degree of variability in the variable of interest (endogenous variables). It shows that the conventional deposits are more accurate than the Islamic banks deposits (see Table 6.3b, p. 194). The U^C is the measurement of systematic error. If the U^C is close or equal to 1, the model is considered good and the estimated value is also accurate. The U^C results also show that the conventional deposits are more accurate than the Islamic banks deposits (see Table 6.3b, p. 194).

(c) In terms of measuring the capability of the model to reach the turning points of the actual data, the conventional deposits base line simulation results can track the true value more closely than the Islamic banks deposits (see Figures 6.3a and 6.3e, pp.197-201).

The above analysis and discussion indicate that the conventional deposits model reflects the real economic situation in Malaysia. In addition, the conventional deposits model is also better than the Islamic banks deposits model for the purposes of economic forecasting in Malaysia. Therefore, the government and policy makers in Malaysia should really look at the conventional economic variables when making any decisions concerning the development of the economic policy framework in Malaysia. These results do not come as a surprise, but merely confirm the observation made by Rodney Wilson that:

> "Although Islam may be a continuing factor influencing politics, as far as Malaysian development is concerned, the influence of conventional economics on Islam may be greater than the impact of Islam on economic policy."[3]

7.5 THE STABILTY OF DEPOSITS

The results show that both conventional and Islamic banks deposits are stable: however, the Islamic demand deposits and Islamic time deposits are more stable than the conventional demand deposits and conventional time deposits. This may be observed in the value of the Chow test (F^c), which is smaller for the Islamic demand

---

[3] Rodney Wilson, Islam and Malaysia's Economic Development, *Journal of Islamic Studies*, Vol. 9, Issue. 2, 1998, p. 276.

deposits and Islamic time deposits than for the conventional demand and time deposits (see Table 6.9, p. 206). There may be several reasons for this, such as:

(a) The Malaysian government, Bank Negara and policy makers are making more use of and becoming more completely dependent on conventional monetary and fiscal development policies as a whole in their efforts to achieve monetary and price stability, economic growth, development of the financial market and of the banking sector and so on, compared to Islamic financial instruments. This can be seen from the statement of Bank Negara in its *Annual Reports 2000*, which says that:

> "Monetary policy evolved according to the changing conditions during the course of the year to address emerging risks and challenges, with the aim of maintaining overall macroeconomic stability. In achieving this objective, Bank Negara Malaysia (BNM) relied on a combination of interest rate, prudential and structural measures."[4]

(b) An excess of liquidity is one of the characteristics of the Islamic banks deposits. There are several reasons for this, namely: (i) The growth of deposits in Islamic banking has far exceeded the demand for Islamic financing, especially during the period 1983 to 1992; (ii) there have been inadequate Islamically acceptable investment outlets, especially before the year 1992; (iii) Bank Islam Malaysia Berhad, Bank Muamalat Malaysia Berhad and other financial instruments that provide Islamic windows (financing) remain profitable because of their low level of risk exposure and they are pursuing a conservative financing policy despite excess liquidity.

(c) The Islamic banks policy is also implemented on the basis of conservatism and is derived from underlying observations of such thing as: (i) severe losses that signal the failure of the philosophy and the implementation of Islamic banking and financial instruments; and (ii) the nature of Islamic contracts undertaken are mostly based on profit-sharing and trade financing rather than on the profit-loss sharing system.

7.6 POLICY CONTROLLABILTY

The results clearly show that the growth of the interest-based money demand (conventional demand deposits and conventional time deposits) correlates more closely with the growth in monetary base than does the growth of the interest-free money demand (Islamic demand deposits, Islamic time deposits and Islamic investment deposits). Therefore, the interest-based money demand (deposits) exhibits stronger and

---

[4] Bank Negara Malaysia, *Annual Reports*, Monetary Policy and Fiscal Developments, 2000, p. 10.

more reliable relationships with policy instruments. These results suggest that the interest-based monetary system plays an important role and provides policy-makers with an effective monetary control environment. In addition, it is clear that the interest-based money demand (deposits) and interest-based monetary system are significant contributors to the success of macroeconomic policy development and to Malaysia's success in terms of economic development.

7.7 THE BEHAVIOUR OF THE VELOCITY OF MONEY

The analysis of the results showed that the velocity of the interest-based money demand (deposits) is lower than that of the interest-free money demand (deposits); therefore, the interest-based money demand (deposits) is less volatile than the interest-free money demand (deposits) in Malaysia. We may therefore conclude that an interest-based banking system promotes financial and macroeconomic stability in Malaysia, since it reduces instability in the velocity of money, thus providing the monetary authorities with an environment that is more conducive to conducting effective policies.

To conclude, it is clear that the monetary system based on the interest rate plays a pivotal role in the Malaysian monetary system, and is even the principal tool for developing overall macroeconomic policy in Malaysia, i.e., for achieving the highest possible employment, price stability and also a higher growth in the Malaysian national income.

7.8 SUMMARY AND COMMENTS ON THE MALAYSIAN ISLAMIC BANKING INDUSTRY

Besides my research into the above topics, I would like to note that I am also searching for a real Islamic banking and finance system that embodies the spirit of the Quranic injunctions and the *Sunnah*[5] of the Holy Prophet (p.b.u.h). However, according to my study of the operation of Malaysian banking and financial institutions, it appears that the Islamic banking and finance system in Malaysia happens to be very similar to the current dominant financial systems. It is clear that some methods of financing in the current Islamic banking climate, such as mark-ups, commission, trade, investment and audit, actually mirror the conventional methods of financing.

---

[5] The way of the Prophet Mohammed (p.b.u.h) including his saying, deeds, approvals or disapprovals as preserved in the *Hadith* literature; the second of the two sources of revelation. *Hadith*, the saying and the deeds of the Prophet Mohammed (p.b.u.h) as recorded in the *Sunnah* holy writings. For more details see Rodney Wilson, *Economics, Ethics and Religion: Jewish, Christian and Muslim Economic Thought*, MacMillan Press Ltd, London: UK, 1997, p. 117.

In addition, since the Islamic scheme allows profit-sharing, it is assumed that this sharing scheme conforms to the Islamic spirit. We argue that this is not true. In my opinion, a financial contract which specifies a known reward/return for the services of capital is invalid under *Shari'ah* (Islamic law).

1) Marking prices up (mark-up) is not in itself a problem. This is what any trader would do, but we have to remember that here we are referring to a sale and not to lending. The case with a loan is is quite different, as when lending one is not allowed to make a profit – that is *riba*. When selling, however, it is permissible. It appears that there is no difference between the practices of the conventional banking system and those of the Islamic banks in this respect.
2) Since the provision of a 'reward rate' (rate of return to depositors) appears to be the un-Islamic aspect of the money deposits (demand), it is tempting to suggest that it should be removed with immediate effect.

I do, however, agree that any suggestion regarding alternatives to the 'reward rate' (rate of return) should be offered only after a careful analysis of the nature of the money contract, which conforms to the *Shari'ah* (Islamic law). As we noted earlier, the Islamic banks and financial institutions in Malaysia do not own the funds they have in their safekeeping, but instead play the role of intermediary between the depositors or the suppliers of the funds and the demanders or investors.

The scarcity of capital in a developing country such as Malaysia is a well-known phenomenon. Nowhere does Islam deny the idea of a return on capital, but the problem is, how does one determine the cost of capital? In a capitalist economy, it is determined by the weighted average cost of debt and equity. There is no doubt that non-repayment or default on payment obligations is present in both conventional and Islamic banking systems. But the important points to note with regard to Islamic banking are the following:

a) In a conventional banking system, any delay in payments will cause the interest to accumulate. The meter is running until the payment is made (although this also depends on the agreement).

b) In the Islamic system there is no meter running on the default, rather, the payment remains fixed, which can act as an incentive to delay the payment. Although this incentive can be removed by inserting a penalty clause for any delay, this penalty clause does not help the bank. The bank cannot benefit from the penalty. It can only go to charity. So an Islamic bank is bound to be the loser in all default cases. This is not the

case in conventional banking. In most cases, the conventional bank does not stand to lose a great deal.

This often poses an insuperable problem to the policy makers whenever the question of introducing Islamic banking in the economy is raised. This problem, however, is theoretical. In practice, the seriousness of this problem is not as great. Business in the real world thrives on trust no matter which society it is being conducted in. A good relationship with the bank will always be a priority for every one of its clients. And "know your client" will always be a consciously applied policy of all banks. So, in practice, the default issue may not end up being as big a problem as it does in theory.

There are a host of other practical issues. The default issue is only a theoretical issue, and practically speaking, not of great significance with respect to Islamic banking vis-a-vis conventional banking.

Islamic finance essentially amounts to selling with deferred delayed payments. In the case of payments not being made on time, the direct consequence to the buyer should take the form of some kind of reduction or delay in the provision of whatever is being sold. This can be built into the contract. For example, we can have a contract for buying a house that runs over several years. The ownership could be transferred in sections each time a payment is made. The buyer pays rent on the share of the home he does not yet own. If payments are delayed, then there is an extra rent as a cost for the buyer. If the buyer cannot even afford the rent, then the buyer could sell back shares of the house to the original seller.

Therefore, according to my own study of Islamic banking in Malaysia I notice many similarities between it and conventional banking. In addition, I think many Muslims tend to want to follow catchphrases from the *Qur'an*[6] and the *Sunnah* without realising that much of what we do today is in fact permitted by the *Qur'an* and the *Sunnah*. My reasons are as follows:

(1) According to my understanding of the principles of Islamic banking and conventional banking, it is clear that the running and implementation of Islamic banking in Malaysia is similar to conventional banking, except that the word 'interest' is not used, but is hidden amidst a barrage of other euphemisms.[7] This, in my opinion, confirms the observation made by Mills and Presley that:

---

[6] The Book of Divine Revelation that was delivered to humankind by the Prophet Mohammed (p.b.u.h).

[7] Abu Huraira (RA) reported that God's messenger (SAW) as saying, "A time is certainly coming to mankind when only the receiver of *Riba* will remain, and if he does not receive it some of its vapour (or alternatively its dust) will reach him." Ahmad, Abu Dawud, Nasai and Ibn Majah transmitted it. (Robson, 1981).

> "Islamic bankers and economists have tended to modify the conventional, fractional reserve banking model to non-interest operations."[8]

This statement may sound naïve, but I do not see that a real Islamic finance system, which embodies the spirit of the *Quranic* injunctions and the *Sunnah* of the Holy Prophet (p.b.u.h), is in operation.

(2) In addition to the above argument, the question of how a person can borrow from an Islamic bank and end up paying back just as much money, and sometimes more than they would have paid back to a conventional bank, is raised. In my opinion, the terms of the Islamic agreement may be different, for instance, *Al-Mudharabah*, *Al-Murabahah*, *Al-Ijarah*, etc, yet they reflect similar or equivalent meanings to the terms used in conventional agreements. What the Islamic banks are doing is giving a return to depositors (they might also call it profit-sharing between the bank and the depositors), but it appears just like the interest paid in the conventional banking system because interest is also a return/reward to depositors[9].

This indicates that the Islamic banks are simply giving the interest rate another name[10] [see Rodney Wilson in his book *Economic Development in the Middle East*, 1995, p. 103]. If we look at it from the point of view of the borrower – is the borrower any better off? In my opinion, definitely not. Is the borrower still being exploited? My answer is yes. The issues involved here are, how much does the borrower borrow, and how much is paid back? Some scholars have deemed this permitted (*Halal*), but from my study it appears that we are still in the same boat, since the structure of the Islamic system mirrors that of the conventional banks.

Al-Murabahah or *Bai' Bithaman Ajil*, as they are practised in Malaysia and by many of the Islamic banks in the Islamic world, are still prohibited (*Haram*), according to my opinion, which actually resonates with the opinions of a lot of a political issues.[11] [see Rodney Wilson in his book *Economic Development in the Middle East*, 1995, p. 100].

---

[8] Paul S. Mills & John R. Presley, *Islamic Finance: Theory and Practice*, MacMillan Press Ltd, London: UK, 1999, p. 17.

[9] Rodney Wilson, *Economics, Ethics and Religion: Jewish, Christian and Muslim Economic Thought*, MacMillan Press Ltd, London: UK, 1997, p. 119.

[10] Some Islamic economists are even more mainstream in approach, accepting the basic premises of western theories, but modifying certain assumptions to make them acceptable to Muslims. For those who follow this approach, the task is to validate what is acceptable in classical and neo-classical theory, and weed out and suggest alternatives for what is not.

[11] Political demands are increasingly expressed in the language of Islam, and much of the political opposition now comes from the Islamists rather than from the secularist left. These developments have been reflected in the economic sphere by the growth of interest in Islamic economics. Funding from Saudi Arabian sources has encouraged in this field, but the growth of interest in Islamic economics has more to do with politics than simply finance.

My argument is, current Islamic banking practices are similar to the practices of the conventional banks where risk is controlled by collateral of assets being financed or guarantees, for example, the practices of the *Bai' Bithaman Ajil* that operates in Malaysia, where the Islamic banks lend money to the borrower to buy a car or a house. When a borrower goes to an Islamic bank for a loan to buy a car, the bank then states that the borrower must buy the car for *X* amount of money from them (which is usually more than the purchase price of the car: at times, the amount is calculated using the percentages of the profit, in a way similar to conventional banks using the interest rate for a specific period of time, e.g., 8 per cent or 10 per cent for five or seven years), and sometimes the profit made by the bank is even higher than that made by some conventional banks. If the implementation is exactly the same as in conventional banks, where is the risk? This confirms what Rodney Wilson has said in his book *Islamic Finance*:

> "The financial instruments have largely been developed from what is deemed practicable and convenient for the bank, provided they can be seen to be consistent with *Shariah* law. Often it has been a case of adapting and modifying conventional instruments so that they can be seen to be Islamically legitimate. Once the *Shariah* advisor is satisfied that religious laws are observed, then the instrument or service can be offered."[12]

In the case of a loan to buy a house, the bank buys the house and requires the borrower to submit a down payment. So the borrower owns a small part and the bank owns the rest. The borrower then pays rent for the greater portion of the house each month, with a little extra payment he can increase his share or claim complete ownership. The amount the borrower has to pay depends on the down payment and the agreed time frame for paying the bank back (for example, 20 or 25 years in Malaysia). This goes on until the borrower has fully paid up for the house. It sounds good, until you look at the figures involved, compared to what the conventional banks offer their customers.

Generally speaking, people are rather too fixated on what *riba* means. There are strong, very well-funded forces, which are out to change the meaning of this concept. It needs to change, but perhaps we need to work on improving Islamic finance and understanding that it is about more than just being interest-free, it is about organising commerce according to all the Islamic principles of justice.

---

[12] Rodney Wilson, *Islamic Finance*, FT Financial Publishing, Pearson Professional Limited, London: UK, 1997, p. 20.

In addition, in Islamic teachings there are also other forms of income that are considered to be *riba*,[13] not just interest on loans. Too often one is focused on the literal aspect of *riba* but the wider context of *riba* is overlooked, i.e., *riba* should be equated with income that is realised without giving something back in return, e.g., corruption is also a form of *riba* according to the Islamic law, cheating the customers is also *riba*. In other words, any form of income that is not rightly "earned" should be considered *riba*.

From the above argument, my suggestions for Islamic banking operations are that Islamic banking should be able to take deposits, give loans and carry out services like conventional banks, but that it should be according to the following working principles:

(a) Islamic banks can take deposits (as conventional banks do) but not on the basis of the profit motive. However, they can provide profits from their investments to the depositors on maturity, e.g., after a year. That means that Islamic banks should simply provide a service to the people and to the government and that they should only be covering the costs of their operations. Islamic banks should have some social objective in addition to profit maximisation.

(b) Islamic banks can make investments in terms of joint ventures with their clients and distribute their profits but they should share profits and losses. In my opinion, that is the true practice of the Islamic *Shari'ah* and Jurisprudence.

7.9 SUGGESTIONS FOR FUTURE RESEARCH

In order to augment the findings of this research, one might explore the theory of cointegration to test the stability of money demand. However, this method (the cointegration test) requires data from over a long time span.[14] In addition, one potential problem of empirical work on the relative stability of the interest-free compared to the interest-based money demand (deposits) in Malaysia, is that there is a mixed banking system in operation, and Islamic banks form a tiny fraction of the banking system.

In addition, it is difficult for us to estimate the proportion of deposits which is held as assets acceptable under the *Shari'ah* Law, as conventional banks in Malaysia offering Islamic facilities do not clearly distinguish between Islamic and non-Islamic accounts in

---

[13] See a discussion of the polemics and controversies over the meaning of *riba* by Rodney Wilson, who writes that 'There is no concensus on the definition of *riba*'. Rodney Wilson (eds,): Politics and the Economy in Jordan, by Arshad Zaman in the *Journal of Islamic Studies*, Vol. 4, No. 2: July 1993, p. 291.

[14] Damodar, N. Gujarati, *Basic Econometrics*, 4th Edition, McGraw-Hill, New York: USA, 2003, pp. 822-826.

their financial reporting.[15] However, further studies can also be made to evaluate the performance of Islamic banks by analysing their financial indicators and by comparing them with those of conventional commercial banks, for example, by comparing an Islamic bank like Bank Islam Malaysia Berhad with a conventional bank like Malayan Banking Berhad (Maybank Berhad). We can also analyse the advantages and disadvantages of Islamic banking institutions, as well as their efficiency compared with that of conventional banks.

---

[15] Rodney Wilson, *Islamic Finance*, FT Financial Publishing, Pearson Professional Limited, London: UK, 1997, p. 18.

BIBLIOGRAPHY

BOOKS

Abdeen, A. M. & Shook, D. N., (1984), "*The Saudi Financial System: In the Context of Western and Islamic Finance*," John Wiley & Sons Ltd, Suffolk: United Kingdom.

Abel, Andrew B. & Bernanke, Ben S., (1995), "*Macroeconomics*," 2nd Edition, Addison-Wesley Publishing Company, New York: United States of America.

Aghnides, N. P., (1961), "*Mohammedian Theories of Finance: With an Introduction to Mohammedian Law, and a Bibliography*," Premier Book House, Lahore: Pakistan.

Ahmad, Khurshid., (1979), "*Studies in Islamic Economics*," Islamic Foundation, Leicester: United Kingdom.

Ahmad, Khurshid., (1979), "*Economic Development in an Islamic Framework*," The Islamic Foundation, Leicester: United Kingdom.

Ahmad, Khurshid., (1980), "*Studies in Islamic Economics*," The Islamic Foundation, UK and International Centre for Research in Islamic Economics, King Abdul Aziz University, Jeddah: Saudi Arabia.

Ahmed, Z., et al., (1983), "*Fiscal Policy and Resource Allocation in Islam*," Institute of Policy Studies, Islamabad and International Centre for Research in Islamic Economics, King Abdul Aziz University, Jeddah: Saudi Arabia.

Ahmad, Ziauddin, et al., (1983), "*Money and Banking in Islam*," International Centre for Research in Islamic Economics, King Abdul Aziz University, Jeddah, and Institute for Policies Studies, Islamabad: Pakistan.

Ahmad, Ziauddin., (1985a), "*Some Misgivings about Islamic Interest-Free Banking*," Annual Lecture in the Annual Lecture Series of Faisal Islamic Bank of Sudan, Khartoum: Sudan.

Ahmad, Ziauddin., (1985b), "*Concepts and Model Islamic Banking: An Assessment*." International Institute of Islamic Economics, Islamabad: Pakistan.

Ahmad, Ziauddin., (1991), "*Islam, Poverty and Income Distribution*," The Islamic Foundation, Leicester: United Kingdom.

Al-Omar, F., & Abdel-Haq, M., (1996), "*Islamic Banking: Theory, Practice and Challenges*," Zed Books, London: United Kingdom.

Al-Shaykh al-Imam Ibn Taymiya., (1985), "*Public Duties in Islam: The Institution of the Hisba*." Translated from Arabic by Muhtar Holland, The Islamic Foundation, Leicester: United Kingdom.

Amemiya, Takeshi., (1986), "*Advanced Econometrics,*" Basil Blackwell. Oxford: United Kingdom.

Amin, S. H., (1986), "*Islamic Banking and Finance: The Experience of Iran,*" Vahid Publications, Tehran: Iran.

Anwar, M., (1987), "*Modelling Interest-Free Economy: A Study in Macroeconomics and Development*," The International Institute of Islamic Thought. Washington, DC: United States of America.

Ariff, M., (Ed.)., (1982), "*Monetary and Fiscal Economics of Islam,*" International Centre for Research in Islamic Economics, Jeddah: Saudi Arabia.

Asian Development Bank., (1998), "*Asian Development Outlook 1998*," Hong Kong: China, Oxford University Press.

Belsley, D. A., et al., (1980), "*Regression Diagnostics: Identifying Influential Data and Sources of Collinearity*," John Wiley and Sons, New York: United States of America.

Branson, W. H., (1979), "*Macroeconomics Theory and Policy*," 2nd Edition, Harper & Row, New York: United States of America.

Burda, M. & Wyplosz., C., (1993), "*Macroeconomics: A European Text*," Oxford University Press, New York: United States of America.

Butterworths Editorial Staff., (1986), "*Islamic Banking and Finance*," Butterworths, London: United Kingdom.

Central Bank of Malaysia., (1999), "*The Central Bank and the Financial System in Malaysia: A Decade of Change 1989-1999*," Government Printers, Kuala Lumpur: Malaysia.

Chapra, M. Umer., (1979), "*Objectives of the Islamic Economic Order*," The Islamic Foundation, Leicester: United Kingdom.

Chapra, M. Umer., (1985), "*Towards a Just Monetary System*," Islamic Foundation, Leicester: United Kingdom.

Chapra, M. Umer., (1992), "*Islam and the Economic Challenge*," the Islamic Foundation, Leicester: United Kingdom.

Chapra, M. Umer., (2000), "*The Future of Economics: An Islamic Perspective*," The Islamic Foundation, Leicester: United Kingdom.

Chow, Gregory C., (1973), "*Econometric Methods*," McGraw-Hill, New York: United States of America.

Council of Islamic Ideology., (1980), "*Report on the Elimination of Interest from the Economy*," Islamabad: Pakistan.

Damodar, N. Gujarati., (1988), "*Basic Econometrics*," 2nd Edition, The McGraw Hill Companies, Inc., New York: United States of America.

Damodar, N. Gujarati., (2003), "*Basic Econometrics*," 4th Edition, The McGraw-Hill Companies, New York: United States of America.

Davidson, J., (2000), "*Econometric Theory*," Blackwell Publishers, Oxford: United Kingdom.

Diebold, F. X., (2001), "*Elements of Forecasting*," 2nd Edition, South-Western Publishers, New York: United States of America.

Draper, N. R., & H. Smith., (1998), "*Applied Regression Analysis*," 3rd Edition, John Wiley & Sons, New York: United States of America.

Enders, Walter., (c1995), "*Applied Econometric Time Series,*" Chichester, Wiley, New York: United States of America.

Favero, Carlo A., (2001), "*Applied Macroeconometrics,*" 1st Edition, Oxford University Press, Oxford: United Kingdom.

Froyen, Richard T., (1993), "*Macroeconomics: Theories and Policies*," 4th Edition, MacMillan Publishing Company, New York: United States of America.

Gafoor, A.L.M. A., (1996), "*Participatory Financing through Investment Banks and Commercial Banks*," Apptec Publications, Groningen: The Netherlands.

Gleave, R, & E. Kermeli., (1997), "*Islamic Law: Theory and Practice*," I. B. Tauris & Co. Ltd Publishers, London: United Kingdom,

Gourieroux, C., (2000), "*Econometrics of Qualitative Dependent Variables*, Cambridge University Press, New York: United States of America.

Government of Malaysia., (1999), "*White Paper Status of the Malaysian Economy*," Kuala Lumpur: Malaysia.

Greene, W. H., (2000), "*Econometric Analysis*," 4th Edition, Prentice-Hall, Inc., New Jersey: United States of America.

Hamilton, J. D., (1994), "*Time Series Analysis*," Princeton University Press, Princeton, New Jersey: United States of America.

Harvey, A. C., (1990), "*The Econometric Analysis of Time Series*," 2nd Edition, MIT Press, Cambridge, Massachusetts: United States of America.

Hayashi, Fumio., (2000), "*Econometrics*," Princeton University Press, New Jersey: United States of America.

Homoud, S. H., (1985), "*Islamic Banking: The Adaptation of Banking Practice to Conform with Islamic Law*," Arabian Information, London: United Kingdom.

Institute of Islamic Banking & Insurance., (1993), "*Islamic Banking and its Problems*," Published by The Institute of Islamic Banking and Insurance, ICIS House, London: United Kingdom.

Institute of Policy Studies., (1994), "*Elimination of Riba from the Economy*," Institute for Policy Studies, Islamabad: Pakistan.

International Monetary Fund., (1998), "*Containing the Risks to the World Economy*," Washington, D.C.: United States of America.

International Monetary Fund., (2004), "*International Financial Statistics*," Washington, D.C.: United States of America.

Iqbal, M., et al., (1998), "*Challenges Facing Islamic Banks*," Islamic Research and Training Institute, Islamic Development Bank, Jeddah: Saudi Arabia.

Iqbal, Munawar, & Llewellyn. D. T., (2002), "*Islamic Banking and Finance: New Perspectives on Profit-Sharing and Risk*," (ed.), Edward Elgar, Cheltenham: United Kingdom.

Islahi, A. A., (1988), "*Economic Concepts of IBN Taimiyah*," The Islamic Foundation, Leicester: United Kingdom.

Islamic Development Bank., (1996), "*Assessment of the Practice of Islamic Financial Instruments: The Case of the IDB Unit Investment Fund and Islamic Bank's Portfolio*," Islamic Development Bank, Jeddah: Saudi Arabia.

Islamic Fiqh Academy., (2000), "*Resolutions and Recommendations of the Council of the Islamic Fiqh Academy 1985-2000*," Islamic Research and Training Institute, Islamic Development Bank, and Islamic Fiqh Academy, Jeddah: Saudi Arabia.

J. Johnston., (1997), "*Econometric Methods*," 3rd Edition, McGraw-Hill, New York: United States of America.

J. Johnston & John DiNardo., (1997), "*Econometric Methods*," 4th Edition, The McGraw-Hill Companies, Inc, New York: United States of America.

Kennedy, Peter., (2003), "*A Guide to Econometrics,*" 5th Edition, MPG Books, Bodmin, Cornwall: United Kingdom.

Khan, J. A., (1995), "*Islamic Economics and Finance: A Bibliography*," Mansell, New York: United States of America.

Khan, M. Akram., (1994), "*Rural Development through Islamic Banks*," The Islamic Foundation, Leicester: United Kingdom.

Khan, M. Fahim., (1995), "*Essays in Islamic Economics*," The Islamic Foundation, Leicester: United Kingdom.

Khan, Waqar M., (1985), "*Towards an Interest-Free Economic System*," The Islamic Foundation and International Association for Islamic Economics. Leicester: United Kingdom.

Khatkhate, Deena, R. & Coats, Waren, L., Jr., (1980), "*Money and Monetary Policy in Less Developed Countries: A Survey of Issues and Evidence*," Pergamon Press, London: England.

Koop, G., (c2000), "*Analysis of Economic Data*," Chichester: Wiley, New York: USA.

Laidler, David E. W., (1985), "*The Demand for Money: Theory, Evidence, and Problems*," 3rd Edition, Harper and Row, New York: United States of America.

Maddala, G. S., (1992), "*Introduction to Econometrics*," 2nd Edition, Maxwell MacMillan International Edition, New York: United States of America.

Mallat, C., & Ballantyne, W. M., (1988), "*Islamic Law and Finance*," Graham & Trotman, London: United Kingdom.

Mallat, C., (1993), "*The Renewal of Islamic Law: Muhammad Baqer as-Sadr, Najaf and the Shi'I International*," Cambridge University Press, Cambridge: United Kingdom.

Mannan, Abdul., M., (1984), "*Abstracts of Researches in Islamic Economics*," International Centre for Research in Islamic Economics, King Abdul Aziz University Press, Jeddah: Saudi Arabia.

Mannan, M, Abdul., (1986), "*Islamic Economics: Theory and Practice*," The Islamic Academy, Cambridge: United Kingdom.

Mervyn K. Lewis & Latifa M. Algaoud, (2001), "*Islamic Banking*," Edward Elgar Publishing Limited, Cheltenham: United Kingdom.

Mills, P. S, & Presley, J. R., (1999), "*Islamic Finance: Theory and Practice*," MacMillan Press Ltd, London: United Kingdom.

Mills, T. C., (1990), "*Time Series Techniques for Economists*," Cambridge University Press, Cambridge: United Kingdom.

M. Sadeq, Abul H., & Ghazali, A., (1992), "*Reading in Islamic Economic Thought*," Longman Malaysia SDN. Berhad, Petaling Jaya: Malaysia.

Muhamad, N. Siddiqi, (1981), "*Muslim Economic Thinking: A Survey of Contemporary Literature*," Islamic Foundation, Leicester: United Kingdom.

Muhamad, N. Siddiqi, (1985), "*Insurance in an Islamic Economy*," Islamic Foundation, Leicester: United Kingdom.

Muhamad, N. Siddiqi., (1996), "*The Role of the State in the Economy: An Islamic Perspective*," The Islamic Foundation, Leicester: United Kingdom.

Naqvi, S.N.H., (1981), "*Ethics and Economics*," Islamic Foundation, Leicester: United Kingdom.

Nicholson, Walter., (1989), "*Microeconomics Theory: Basic Principles and Extensions*," The Dryden Press, Orlando, Florida: United States of America.

Nomani, F., & Rahnema, Ali., (1994), "*Islamic Economic Systems*," Zed Books Ltd, London: United Kingdom.

Presley, J. R., (1998), "*Directory of Islamic Financial Institutions*," (ed.), Croom Helm, United Kingdom.

Robson, J., (1981), "*Miskat Al-Masabih* English Translation," Volume 1, Page 604, Published by Sh. Muhammad Ashraf, Lahore: Pakistan.

Rodinson, M., (1974), "*Islam and Capitalism*," Richard Clay (The Chaucer Press) Ltd, Bungay, Suffolk: Great Britain.

SAS/STAT., (1990a), "*User's Guide*," Version 6, 4th Edition, Volume 1, Cary, NC: SAS Institute Inc., SAS Campus Drive, Cary, North Carolina, United States of America.

SAS/STAT., (1990b), "*User's Guide*," Version 6, 4th Edition, Volume 2, Cary, NC: SAS Institute Inc., SAS Campus Drive, Cary, North Carolina, United States of America.

Satoshi I., (1985), "*A new Approach to Human Economics: A Case Study of an Islamic Economy*," IMES – I. U. J. Working Papers, Number 2, June 1985.

Shapiro, E., et al., (1968), "*Money and Banking*," Holt, Rinehart and Winston, Inc., 5th Edition, New York: United States of America.

Siddiqi, M. N., (1983), "*Banking without Interest*," The Islamic Foundation, Leicester: United Kingdom.

Siddiqi, M. N., (1983), "*Issues in Islamic Banking (Selected Papers)*," The Islamic Foundation, Leicester: United Kingdom.

Siddiqi, M. N., (1986), "*Banking and Monetary Polices in Islamic Economics*," Khartoum: Faisal Islamic Bank, Khartoum: Sudan.

Simon A., & Rifaat A. A. Karim., (2002), "*Islamic Finance: Innovation and Growth*," Euromoney Books and AAOIFI, London: United Kingdom.

Studenmund, A. H., (1992), "*Using Econometrics: A Practical Guide,*" 2nd Edition, HarperCollins Publishers Inc, New York: United States of America.

Taqiuddin an-Nabhani., (1997), "*The Economic System in Islam*," 4th Edition, Al-Khalifah Publications, London: United Kingdom.

Theil, H., (1971), "*Principles of Econometrics*," John Wiley and Sons, New York: United States of America.

UNCTAD., (1998), "*Trade and Development Report*," United Nations Conference on Trade and Development, Geneva: Switzerland.

Usmani, M. Taqi., (2002), "*An Introduction to Islamic Finance*," Kluwer Law International, The Hague: Holland.

Vogel, Frank, E. & Hayes, Samuel, L. III., (1998), "*Islamic Law and Finance: Religion, Risk, and Return*," Kluwer Law International, The Hague: The Netherlands.

Warde, Ibrahim., (2000), "*Islamic Finance in the Global Economy*," Edinburgh University Press, Edinburgh: United Kingdom.

Wilson, Rodney, (1983), "*Banking and Finance in the Arab Middle East*," MacMillan, London: United Kingdom.

Wilson, Rodney, (1984), "*Islamic Business: Theory and Practice*," The Economist Intelligence Unit, London: United Kingdom.

Wilson Rodney, (1985), "*Islamic Business: Theory and Practice*," The Economic Intelligence Unit (Revised Edition), London: United Kingdom.

Wilson, Rodney, (1990), "*Islamic Financial Market*," Biddles Ltd, Guildford and King's Lynn, London: Great Britain.

Wilson Rodney, (1997), "*Islamic Finance*," FT Financial Publishing (Pearson Professional Limited), London: United Kingdom.

Wilson, Rodney, (1995), "*Economic Developments in the Middle East*," Routledge, London: United Kingdom.

Wilson, Rodney, (1997), "*Economics, Ethics and Religion: Jewish, Christian and Muslim Economic Thought*," MacMillan Press Ltd, London: United Kingdom.

Wohlers-Scharf, Traute., (1983), "*Arab and Islamic Banks: New Business Partners For Developing Countries*," Development Centre of the Organisation for Economic Co-operation and Development (OECD), Paris: France.

WTO., (1999), "*International Trade: Exports and Imports by Countries*," World Trade Organisation, Geneva: Switzerland.

WTO., (2002), "*International Trade: Exports and Imports by Countries*," World Trade Organisation, Geneva: Switzerland.

WTO., (2003), "*International Trade: Exports and Imports by Countries*," World Trade Organisation, Geneva: Switzerland.

Zaman, S. M. H., (1991), "*Economic Functions of an Islamic State (The Early Experience)*," The Islamic Foundation, Leicester: United Kingdom.

Zubair, I & Mirakhor, A., (1987), "*Islamic Banking*," International Monetary Fund, Washington, D.C: United States of America.

ARTICLES AND CHAPTERS IN BOOKS

Abdel-Hameed M. Bashir., (1999), "Risk and Profitability Measures in Islamic Banks: The Case of Two Sudanese Banks," *Islamic Economics Studies*, Vol. 6, No. 2, May, 1999, pp. 1-19, Louisiana: United States of America.

Abdul A. Sarker., (2000), "Regulation of Islamic Banking in Bangladesh: Role of Bangladesh Bank," *International Journal of Financial Services*, Vol. 2, pp 18-22.

Alesina, A., & Summers, L. H., (1993), "Central Bank Independence and Macroeconomic Performance: Some Comparative Evidence," *Journal of Money, Credit and Banking*, Vol. 25, Issue 2, May 1993, pp. 151-162.

Ahmad Kaleem., (2000), "Modelling Monetary Stability under a Dual Banking System: The Case of Malaysia," *International Journal of Islamic Financial Services*, Vol. 2, pp. 3-11.

Ariff, M., (1998), "Islamic Banking," *Asian-Pacific Economic Literature*, Blackwell Publishing, Vol. 2, No. 2, pp. 46-62.

Arango, S. & Nadiri, M. I., (1981), "Demand for Money in Open Economics," *Journal of Monetary Economics*, North-Holland Publishing Company, Vol. 7, pp. 69-83.

Bagsiraj, M. I., (2002), "Islamic Financial Institutions of India," in *Islamic Banking and Finance: New Perspectives on Profit-Sharing and Risk*, in Iqbal, M. and Llewellyn, D. T., (ed.), Edward Elgar, Cheltenham: UK, pp. 169-192.

Bashir, A., (1996), "Profit-Sharing Contracts and Investment under Asymmetric Information," *Research in Middle East Economics*, Vol. 1, pp. 173-186.

Batten, D. S., & D. L. Thornton., (1983), "M1 or M2: Which is the Better Monetary Target?" *Federal Reserve Bank of St. Louis Review*, Vol. 65, pp. 36-42.

Benyamin, M. Friedman & Kenneth N. Kuttner, (1992), "Money, Income, Prices, and Interest Rates," *The American Economic Review*, Vol. 82, Issue, 3 (Jun., 1992), pp. 472-492.

Chapra, M. Umer., (1982), "Money and Banking in an Islamic Economy," in *Monetary and Fiscal Economics of Islam*, Muhammad Ariff (ed.) International Centre for Research in Islamic Economics, pp. 145-186, Jeddah: Saudi Arabia.

Darrat, Ali F., (1986), "The Demand for Money in Some Major OPEC Members: Regression Estimates and Stability Results," *Applied Economics*, Vol. 18, pp. 127-142.

Darrat, Ali F., (1988), "The Islamic Interest-Free Banking System: Some Empirical Evidence," *Applied Economics*, Vol. 20, pp. 417-425.

Errico, Luca. & Farahbaksh, M., (1998), "Islamic banking: Issues in Prudential Regulations and Supervision," *Working paper; (30)*, International Monetary Fund (IMF), Washington D. C: United States of America.

Flavin, T. J. & Limosani, M. G., (2000), "Fiscal Policy and the Term Premium in Real Interest Rate Differentials," *Applied Financial Economics*, 10, 413-417.

Friedman M., (1959), 'The Demand for Money: Some Theoretical and Empirical Results," *Journal of Political Economy*, Vol. 67, pp. 327-351.

Hall, T. E., & Noble, N. R., (1987), "Velocity and the Variability of Money Growth: Evidence from Granger-Causality Tests: Note," *Journal of Money and Banking*, Vol. 9, Issue 1 (Feb, 1987), pp. 112-116.

Hassan, M. Kabir., (1996), "Stability of Money Demand under an Interest-Free versus Interest-Based Banking System," *University of New Orleans*, USA, pp. 1-15.

Hassan, M. Kabir., (1992), "An Econometric Analysis of Credit Constraint, Foreign Interest Rates and Currency Depreciation in the Demand for Money in Bangladesh," *The Bangladesh Development Studies*, Vol. 20, No. 4, December 1992, pp. 15-29.

Hein, S. E. & Veugelers, Paul T. W. M., (1983), "Predicting Velocity Growth: A Time Series Perspective," *Federal Reserve Bank of St. Louis*, USA, (October 1983), pp. 34-43.

Homoud, S. H., (1994), "Progress of Islamic Banking: The Aspiration and the Realities," *Islamic Economic Studies*, Vol. 2, No. 1 (December 1994), pp. 71-80.

Iqbal, Zamir., (1997), "Islamic Financial System, International Monetary Fund Staff Paper," *Finance and Development*, June 1997, pp. 42-45.

Iqbal, Zubair & Mirakhor, A., (1987), "Islamic banking," *Occasional paper; (49)*, International Monetary Fund (IMF), Washington D. C: United States of America.

Karim, A. A., (2002), "Incentive-Compatible Constraints for Islamic Banking: Some Lessons from Bank Muamalat," in *Islamic Banking and Finance: New Perspectives on Profit-Sharing and Risk*, Iqbal, M. and Llewellyn, D. T., (ed.), Edward Elgar, Cheltenham: UK, pp. 95-108.

Khalil, Abdel-Fatah. A. A., et al., (2002), "Evidence on Agency-Contractual Problems in Mudarabah Financing Operations by Islamic Banks," in *Islamic Banking and Finance: New Perspective on Profit-Sharing and Risk*, Iqbal, M and Llewellyn, D. T., (ed.), Edward Elgar, Chetenham: UK, pp. 57-92.

Khan, M.A. Jabbar., (1986), "Non-Interest Banking in Pakistan: A Case Study," *Proceedings of the Seminar on Developing a System of Islamic Financial Instruments*, Kuala Lumpur: Malaysia.

Khan, Mohsin S., & Abbas Mirakhor, (1985), "The Financial System and Monetary Policy in an Islamic Economy," *Research Paper*, November 18, International Monetary Fund, Washington D.C: United States of America.

Khan, Mohsin S., (1986), "Islamic Interest-Free Banking: A Theoretical Analysis," *Staff Papers*, Vol. 33, No. 1 (March 1986), pp. 1-27, International Monetary Fund, Washington D.C: United States of America.

Khan, Mohsin S., & Abbas Mirakhor, (1986), "The Framework and Practice of Islamic Banking," *Finance and Development*, Vol. 23, pp. 32-36.

Khan, Mohsin S. & Abbas Mirakhor, (ed.), (1987), "Theoretical Studies in Islamic Banking and Finance," *The Institute for Research and Islamic Studies*, Houston: United States of America.

Laumas, G. S., & P. S. Laumas, (1976), "The Permanent Income Hypothesis in an Underdeveloped Economy," *Journal of Development Economics,* North-Holland Publishing Company, Vol. 3, No. 3, September 1976, pp. 289-297.

Lopez, L., (2003), "A Well-Oiled Money Machine,"*Far Eastern Economic Review*, Petronas, Hong Kong: China, March 13, pp. 40-43.

Mahmood Y., Sohrab A., & K. Mccormick, (1997), "Monetary Stability and Interest-Free Banking: The Case of Iran," *Applied Economics*, Vol. 29, pp 869-876.

Metwally, M. M., (1985), "The Role of the Exchange in an Islamic Economy," *Journal of Research in Islamic Economics*, Vol. 2, pp. 21-30.

Metwally M. M. & A. M. M. Abdel Rahman, (1990), The Demand for Money in Saudi Arabia, *Indian Economic Journal*, Vol. 38(1), pp. 89-102.

Muhammad, A. (1998), "Islamic Banking," *Asian-Pacific Economic Literature*, Vol. 2, Issue 2, University of Malaya, September, pp. 48-64.

Muhammad, A. Rahman., (2001), "The Financial Crisis and Malaysia's Response," *Course on Dealing with Banking Crises Singapore*, IMF-Singapore Regional Institute (STI), Singapore.

Muhamad, N. Siddiqi, (1988), "Islamic Banking: Theory and Practice," in *Banking in Southeast Asia*, Mohammad Ariff (ed.), Institute of Southeast Asian Studies, Singapore.

Mustaq, A & Ashfaque H. Khan, (1990), "A Reexamination of the Stability of the Demand for Money in Pakistan," *Journal of Macroeconomics*, Vol. 12, pp. 307-321.

Nadal-De Simone, Francisco de A., (1998). "Monetary and Fiscal Policy Interaction in a Small Open Economy: The Case of Singapore," *Asian Economic Journal*, Vol. 14, No. 3, pp. 211-231.

National Economic Action Council (NEAC), (1998), "Social Impact of the Regional Financial and Economic Crisis: Malaysian Experience," *Briefing to INTAN Participants for the Workshop on National Economic Management*, October, 1998, Economic Planning Unit, Prime Minister's Department, Federal Government Administrative Centre, Putra Jaya: Malaysia.

Obben, James., (1998), "The Demand for Money in Brunei," *Asian Economic Journal*, Vol. 17, pp 109-121.

Poh, Ghan Kuan., (1995), "Macro-Economic Planning," *Briefing to INTAN Participants for the Workshop on National Economic Management*, Economic Planning Unit, Prime Minister's Department, Federal Government Administrative Centre, Putra Jaya: Malaysia.

Presley, J. R. & J. G. Sessions, (1994), "Islamic Economics: The Emergence of a New Paradigm," *The Economic Journal*, May 1994, pp. 584-596.

Presley, J. R. & Abalkhail, M., (2002), "How Informal Risk Capital Investors Manage Asymmetric Information in Profit/Loss-Sharing Contracts," in *Islamic Banking and Finance: New Perspectives on Profit-Sharing and Risk*, Iqbal, M. and Llewellyn, D. T., (ed.), Cheltenham: UK, pp. 111-134.

Startz, Richard., (1981), "Implicit Interest on Demand Deposit - Reply," *Journal of Monetary Economics*, North-Holland Publishing Company, Vol. 7, pp. 403-404.

Thornton, D. L., (1983), "Why Does Velocity Matter?" *Federal Reserve Bank of St. Louis*, USA, December 1983, pp. 5-43.

Wee Victor., (2001), "Development Planning and Process in Malaysia," *Briefing to Senior Officials from the Finance and Economic Ministry of Mongolia*, Economic Planning Unit, Prime Minister's Department, Putra Jaya: Malaysia.

Wilson, Rodney, (1987), "Islamic Banking in Jordan," *Arab Law Quarterly*, Vol. 2, No. 3, pp. 207-229.

Wilson, Rodney, (1989), "The Islamic Development Bank's Role as an Aid Agency for Muslim Countries," *Journal of International Development*, Vol. 1, No. 4, pp. 444-466.

Wilson, Rodney, (1994), "Development of Financial Instruments in an Islamic Framework," *Islamic Economics Studies*, Vol. 2 (No.1), pp. 103-115.

Wilson, Rodney, (1995), "Islamic Development Finance in Malaysia," in *Leading Issues in Islamic Banking and Finance*, Saad Al-Haran., (Ed.), Pelanduk Publications, Kuala Lumpur: Malaysia, pp. 59-81.

Wilson, Rodney, (1995), "Islamic Banking: Going Global," *The Banker*, London: UK, March, 1995, pp. 45-46.

Wilson, Rodney, (1996), "Quantifying the Islamic Financial Markets," *New Horizon*, London: UK, August 1996, No. 54 (1), pp. 9-14.

Wilson, Rodney, (1996), "Quantifying the Islamic Markets Size," *New Horizon*, London:UK, September 1996, No. 55 (2), p. 13-15.

Wilson, Rodney, (1997), "Morality in Economics," *Humanomics*, Vol. 13 (No. 3/4), pp. 3-32.

Wilson, Rodney, (1998), "The Contribution of Muhammad Baqir al-Sadr to Contemporary Islamic Economic Thought," *Journal of Islamic Studies*, Vol. 9, No. 1, January 1998, pp. 46-59.

Wilson, Rodney, (1998), "Islam and Malaysia's Economic Development," *Journal of Islamic Studies*, Vol. 9, Issue 2, pp. 259-276, Oxford University Press, Oxford: UK.

Wilson, Rodney, (1997), "Islamic Finance and Ethical Investment," *International Journal of Social Economics*, Vol. 24, No. 11, pp. 1325-1342.

Wilson, Rodney, (2002), "The Interface between Islamic and Conventional Banking," in *Islamic Banking and Finance: New Perspective on Profit-Sharing and Risk*, Iqbal, M., and Llewellyn, D. T., (ed.), Edward Elgar, Cheltenham: UK, pp. 196-212.

Wong, C., (1977), "Demand for Money in Developing Countries: Some Theoretical and Empirical Results," *Journal of Monetary Economics*, January 1977, pp. 75-86.

Yasseri, A., (2002), "Islamic Banking Contracts as Enforced in Iran," in *Islamic Banking and Finance: New Perspectives on Profit-Sharing and Risk*, Iqbal, M. and Llewellyn, D. T., (ed.), Edward Elgar, Cheltenham: UK, pp. 155-167.

Zarqa, M. Anas., (1983), "Stability in an Interest-Free Economy," *Pakistan Journal of Applied Economics*, Vol. 2, pp. 181-188.

THESES AND DISSERTATIONS

Ahmed, O. B., (1991), "The Contribution of Islamic Banking to Economic Development: The Case of the Sudan," (Ph. D. Thesis, University of Durham).

Borhan, J. T. Bin, (1997), "The Doctrine and Application of Partnership in Islamic Commercial Law with Special Reference to Malaysian Experiments in Islamic Banking and Finance," (Ph. D. Thesis, University of Edinburgh).

Casson, D. A., (1989), "Islamic Finance in Kuwait," (M. A. Thesis, University of Durham).

Chachi, A., (1989), "Islamic Banking," (Ph. D. Thesis, University of Wales).

Firth, D. M. A., (1990), "International Islamic Finance," (M. A. Thesis, University of Durham).

Kabbara, A. H. S., (1988), "*Islamic Banking: A Case Study of Kuwait*," (Ph. D. Thesis, University of Loughborough).

Thani, N. N., (1993), "The Legal Aspects of the Regulatory Framework of the Malaysian Financial System," (Ph. D. Thesis, London School of Oriental and African Studies).

BOOK REVIEWS

Kamali, M. Hashim, Book Review on "Abdullah Alwi Haji Hassan, Sales and Contracts in Early Islamic Commercial Law," *Journal of Islamic Studies*, Vol. 8, No. 1, January 1997, pp. 92-94.

Khadduri, Majid., Book Review on "Mohammad Hashim Kamali, Principles of Islamic Jurisprudence," *Journal of Islamic Studies*, Vol. 4, No. 1, January 1993, pp. 84-86.

Muzafar, Abul, Book Review on "S. M. Hassanuz-Zaman, Economic Functions of an Islamic State," *Journal of Islamic Studies*, Vol. 5, No. 1, January 1994, pp. 153-155.

Wilson, Rodney, Book Review on "M. Umer Chapra, Islam and the Economic Challenge", *Journal of Islamic Studies*, Vol. 5, No. 1, January 1994, pp. 151-152.

Wilson, Rodney, Book Review on "M. Nejatullah Siddiqi, Role of the State in the Economy: An Islamic Perspective," *Journal of Islamic Studies*, Vol. 8, No. 1, January 1997, pp. 138-140.

Zaman, Arshad, Book Review on "Rodney Wilson (ed.), Politics and Economics in Jordan," *Journal of Islamic Studies*, Vol. 4, No. 2, July 1993, pp. 290-292.

ELECTRONIC SOURCES

Affin Bank, Affin Bank website, *Branch Locations*, http://www.affinbank.com.my/branches/branch.htm/.

Albalagh, Albalagh website, *The Text of the Historic Judgment on Interest*, http://www.albalagh.net/Islamic_economics/riba-judgment.shtr/.

Al Rajhi Banking & Investment Corp, Al Rajhi Bank website, *Instruments of IslamicBanking and Finance – Murabaha,* http://www.alrajhibank.com.sa/instru-murabaha.htm/.

Al Rajhi Banking & Investment Corp, Al Rajhi Bank website, *Instruments of IslamicBanking and Finance – Mudaraba*, http://www.alrajhibank.com.sa/instruments-mudarabah.htm/.

Al Rajhi Banking & Investment Corp, Al Rajhi Bank website, *Instruments of IslamicBanking and Finance – Musharaka*, http://www.alrajhibank.com.sa/instruments-musharaka.htm/.

Al Rajhi Banking & Investment Corp, Al Rajhi Bank website, *Instruments of IslamicBanking and Finance – Ijara*, http://www.Alrajhibank.com.sa/instru-ijara.htm/.

Al Rajhi Banking & Investment Corp, Al Rajhi Bank website. *Instruments of Islamic Banking and Finance – Salam*, http://www.alrajhibank.com.sa/instruments-salam.htm/.

Al Rajhi Banking & Investment Corp, Al Rajhi Bank website, *Instruments of IslamicBanking and Finance-Istisna*, http://www.alrajhibank.com.sa/instruments-istisna.htm/.

Arab Malaysian Bank, Arab Malaysian website, *Branch Locator and ATM Network*, http://www.amcorp.com.my/our_buss_capital_market.htm/.

Asiatrade, Asiatrade website, *Malaysia–Monetary Policy*, http://www.asiatradehub.com/malaysia/policy.asp/.

Asia Development Bank, ADB website, *An Insight into Macroeconomic Policy Management and Developments in Malaysia*, http://www.adb.org/Documents/Books/Rising_to_the_Challenge/Malaysia/.

Asia Development Bank, ADB website, *Country Assistance Plans – Malaysia – ADB.org*, http://www.adb.org?Documents/CAPs/MAL/0101.asp?p=ctrymal/.

Asia Development Bank, ADB website, Haflah Piei and Tiangchye Tan, *An Insight into Macroeconomic Policy Management and Developments in Malaysia, 2000*, pp. 1-31, http://www.adb.org?Documents/Books/Rising_to_the_Challenge/Malaysia/.

Asia Development Bank, ADB website, *Industrialisation and Investment Development Policies*, http://www.adb.org/Documents/Books/Rising_to_the_Challenge/Malaysia/.

Bank for International Settlements, BIS website, *Core Principles for Effective Banking Supervision*, http://www.bis.org/press/p970922.htm/.

Bank Islam Malaysia Berhad, BIMB website, *Total Branches and Staff*, http://www.bankislam.com.my/berita_mei23_e.htm/.

Bank Islam Malaysia Berhad, BIMB website, *Financing of Customers*, http://www.bankislam.com.my/AR/AR02_1%20.pdf/.

Bank Islam Malaysia Berhad, BIMB website, *Instruments of Islamic Banking and Finance – Bai' Bithaman Ajil (BBA)*, http://www.bankislam.com.my/pstpnergan_maksud_e.htm#baibithaman/.

Bank Islam Malaysia Berhad, BIMB website, *Instruments of Islamic Banking and Finance – Al-Murabahah*, http://www.bankislam.com.my/pstpnergan_maksud_e.htm#almurabahah/.

Bank Islam Malaysia Berhad, BIMB website, *Instruments of Islamic Banking and Finance – Al-Istisna*, http://www.bankislam.com.my/pstpnergan_maksud_e.htm#alistisna/.

Bank Islam Malaysia Berhad, BIMB website, *Opening of Bank Islam 87th Service Outlet*, www.bankislam.com.my/pengumuman_Jul016_e.htm/.

Bank Muamalat Malaysia Berhad, Bank Muamalat website, *Bank Muamalat – Total Financing*, http://www.muamalat.com.my/default.asp?page=annual/.

Bank Muamalat Malaysia Berhad, Bank Muamalat website, *Our Locations*, http://www.muamalat.com.my/default.asp?page=location/.

Bank Negara Malaysia, BNM website, *Administered Legislation*, http://www.bnm.gov.my/index.php?ch=14&pg=/.

Bank Negara Malaysia, BNM website, *Islamic Banking – Overview*, http://www.bnm.gov.my/fin_sys/islamic/index.html/.

Bank Negara Malaysia, BNM website, *Islamic Banking Overview, 1997-2000*, http://www.bnm.my/fin_sys/islamic/index.htm/.

Bank Negara Malaysia, BNM website, *Islamic Banking Concepts*, http://www.bnm.gov.my/index.php?ch=174&pg=467&ac=368/.

Bank Negara Malaysia, BNM website, *Islamic Banking Concepts*, http://www.bnm.my/fin_sys/islamic/concepts.htm/.

Bank Negara Malaysia, BNM website, *Islamic Banking List of Players*, http://www.bnm.gov.my/fin_sys/islamic/players.htm/.

Bank Negara Malaysia, BNM website, *National Shari'ah Advisory Council, 1997-2000*, http://www.bnm.gov.my/fin_sys/islamic/nsac.htm/.

Bank Negara Malaysia, BNM website, *Objectives and Functions*, http://www.bnm.gov.my/index.php/.

Bank Negara Malaysia, BNM website, *The Financial System*, http://www.bnm.gov.my/fin_sys/financial.htm/.

Bank Negara Malaysia, BNM website, *Annual Reports*, http://www.bnm.gov.my/index.php?ch=109&pg=294&mth=5&yr=2003/.

Bank Negara Malaysia, BNM website, *Statistics*, http://www.bnm.gov.my/index.php?ch=109&pg=294&mth=5&yr=2003/.

Bank Negara Malaysia, BNM website, *The Financial System*, http://www.bnm.gov.my/index.php?ch=109&pg=294&mth=5&yr=2004/.

Bumiputra-Commerce Berhad, BCB website, *Branch and Business Centre*, http://www.bcb.com.my/locations/branches.htm/.

Bursa Malaysia Berhad, Bursa Malaysia website, *About Us and Vision*, http://www.bursamalaysia.com/website/aboutus/vision.htm/.

Department of Statistics, Department website, *Key Statistics*, http://www.statistics.gov.my/English/framesetKeystats.htm/.

Economic Planning Unit, EPU website, *Eighth Malaysia Plan 2001-2005, 2001*, http://www.epu.jpm.my/RM8c2_cont.pdf/.

Economic Planning Unit, EPU website, *Seven Malaysia Plan 1996-2000, 1996*, http://www.epu.jpm.my/Bi/dev_plan/7MP/.

Economic Planning Unit, EPU website, *The Way Forward (Vision 2020)*, 1991, http://www.epu.jpm.my/.

Economic Planning Unit, EPU website, W*hite Paper on the Status of the Financial Crisis – Part II, 1999*, http://www.epu.jpm.my/Bi/public/White/White_paper.html#part2/.

Economic Planning Unit, EPU website, *White Paper on the Status of Issues Arising from the Crisis – Part III, 1999*, http://www.epu.jpm.my/Bi/public/White/White_paper.html#part2/.

Economic Planning Unit, EPU website, *White Paper on the Status of Issues Arising from the Crisis-Part III*, http://www.epu.jpm.my/.

Economic Planning Unit., EPU website, *Building a United and Equitable Society*, http:/www.epu.jpm.my/new%20folder/opp3/cont_chapter4.pdf/.

Employees Provident Fund, EPF website, *Total EPF Contribution Increase in 2003*, http://www.kwsp.gov.my/english/latestpress.html/.

Environmental Impact Assessment, EIA website, *Malaysia Country Analysis – Oil*, http://www.eia.doe.gov/emeu/cabs/malaysia.html/.

EON Bank, EON website, *Branch Locator*, http://www.eonfin.com/Contact_Us/branch_locator.asp/.

Executive's Meeting of East Asia-Pacific Central Banks & Monetary Authorities, EMEAP website, *Monetary Policy and the Role of the Central Bank in Malaysia*, http://www.emeap.org:8084/RedBook/M1/A2.htm/.

Executive's Meeting of East Asia-Pacific Central Banks & Monetary Authorities, EMEAP website, *Management of Liquidity by the Central Bank*, http://www.emeap.org:8084?RedBook?M1/A2.htm/.

Fordham, Fordham website, *Malaysia Exchange Rate Performance*, http://www.fordham.edu/emp/country_studies/malaysia.pdf/.

Government of Malaysia, MATRADE website, *Malaysian Trade*, http://www.matrade.gov.my/economy-trade/key-indicators.htm/.

Government of Malaysia, MATRADE website, *MATRADE Press Release 2001*, http://www.matrade.gov.my/about-matrade/media/2001/PressRelease.htm/.

Hong Leong Bank, HLB website, Branches, *ATM and In-Store Network*, http://www.hlb.com.my/

International Monetary Fund, IMF website, *Adopting Indirect Instruments of Monetary Policy*, http://www.imf.org/external/pubs/ft/fandd/1996/03/pdf/alexande.pdf/.

Kumpulan Wang Simpanan Pekerja, KWSP website, *Total EPF Contribution Increase in 2003*, http://www.kwsp.gov.my/english/latestpress.html/.

Labuan International Offshore Financial Centre, LOFSA website, *Labuan Offshore Financial Services Authority*, http://www.lofsa.gov.my/lofsa5/index.htm/.

Labuan International Offshore Financial Centre, LOFSA website, *Offshore Banks*, http://www.lofsa.gov.my/lofsa5/directory/offbank/offbankt.htm#R/.

Lawyerment, Lawyerment website, *Malaysian Financial Law – Banking Law – Bank Negara Legislation and Enforcement*, http://www.lawyerment.com.my/financial/banking.shtml/.

Lawyerment, Lawyerment website, *Malaysian Financial Law – Danaharta Act*, http://www.lawyerment.com.my/financial/danaharta.shtml/.

Lawyerment, Lawyerment website, *Malaysian Financial Law – Banking Law*, http://www.lawyerment.com.my/financial/banking.shtml/.

Malayan Banking Berhad, Maybank website, *Total Branches*, http://www.maybank2u.com/consumer/online_banking/index.shtmlMalaysia/.

National Economic Action Committee, NEAC website, *The Malaysian Economy in 2003*, http://www.bnm.gov.my/files/publication/ar/en/2003/cp01.pdf/.

Industry, Malaysia-Industry website, *Manufacturing Sector*, http://www.malaysia-industry.com/malaysia/index.php/.

Ministry of Agriculture, MOA website, *The National Agricultural Policy (1992-2010), 1992*, http://agrolink.moa.my/stra.html/.

Ministry of Agriculture, MOA website, *The National Agricultural Policy (1992-2010), 1992*, http://agrolink.moa.my/intro.html/.

Ministry of Agriculture, MOA website, *The National Agricultural Policy (1992-2010), 1992*,
http://agrolink.moa.my/backgrd.html/.

MSA-USC, MSA website, *Islamic Banking*,
http://www.usc.edu/dept/MSA/economics/islamic_banking.html/.

Multi-Purpose Bank Berhad, Multi-Purpose website, *Branch Locations in Malaysia*,
http://www.qualisteam.com/Detailed/2359.html/.

Multimedia Super Corridor, MSC website, *Multimedia Super Corridor Status*,
http://www.gamebrains.com/malaysia/overview/masc/.

Multimedia Super Corridor, MSC website, *Multi-Purpose Card*,
http://www.msc-expo.com.my/home.htm/.

Multimedia Super Corridor, MSC website, *MSC Status*,
http://www.mdc.com.my/.

Petroleum Nasional Berhad, PETRONAS website, *Oil and Gas*,
http://www.tradepartners.gov.uk/oilandgas/malaysia/profile/overview.shtml/.

Public Bank Berhad, PB website, *Branch Network in Malaysia*,
http://www.publicbank.com.my/en/en_content/personal/mainpage.html/.

Rubberwood, Rubberwood website, *Rubber Wood Products*,
http://www.rubberwoods.com/about%20rubber%20wood.htm/.

RHB Bank Berhad, RHB website, *Our New Branch at Kuching*,
http://www.rhbbank.com.my/personal/whatsnew.shtm/.

Scalabrini, Scalabrini website, *Asian Migration News*. 16-28 February, 1999, pp. 12-19,
http://www.scalabrini.org/~smc/amnews.htm/.

Singapore Institute of International Affairs, SIIA website, *Foreign Labour in Malaysia*,
http://www.siiaonline.org/eadn/Migrant%20Labour%20in%20Malaysia/.

Southern Bank Berhad, Southern Bank website, *Branch and ATM Services*,
http://www.sbb.com.my/general/en/sitemap/main_sitemap.html/.

South Asian Association for Regional Cooperation, SAARC website, *Production of Natural Rubber in Main Producing Countries in Asia*,
http://www.saarcnet.org/newsaarcnet/saarcchambers/saarc_summit/rubber.htm/.

United Nations Economic & Social Commission for Asia & the Pacific.
UNESCAP website, *Integrating Environmental Considerations into the Economic Decision-Making Process*,
http://www.unescap.org/drpad/publication/integra/volume3/malaysia/htm/.

World Bank, World Bank website, *The World Bank Group*, Data Profile,
http://www.worldbank.org/data/countrydata/countrydata.html/.

World Bank & Chulalongkorn University, WB-CU website. *Transmission Mechanism of Monetary Policy in Malaysia*, http://wb-cu.car.chula.ac.th/papers/transmission.htm/.

World Trade Organisation, WTO website, *Exports and Imports by Countries*, http://www.wto.org/english/res_e/statistics_e/stats2000_e.pdf/.

World Trade Organisation, WTO website, *Trade by Region*, http://www.wto.org/english/tratop_e/tpr_e/tp180_e.htm/.

Government of Malaysia Central Bank Reports and Development Plans

Central Bank of Malaysia., *Monthly Statistical Bulletin*, Government Printers. Kuala Lumpur: Malaysia (Various issues).

Central Bank of Malaysia., (2000), *Monthly Statistical Bulletin*, Government Printers. Kuala Lumpur: Malaysia.

Central Bank of Malaysia., (2001), *Monthly Statistical Bulletin*, Government Printers, Kuala Lumpur: Malaysia.

Central Bank of Malaysia., (2002), *Monthly Statistical Bulletin*, Government Printers, Kuala Lumpur: Malaysia.

Central Bank of Malaysia., (2003), *Monthly Statistical Bulletin*, Government Printers. Kuala Lumpur: Malaysia

Central Bank of Malaysia., (2004), *Monthly Statistical Bulletin*, Government Printers, Kuala Lumpur: Malaysia.

Central Bank of Malaysia., (1996), *Annual Reports*, Government Printers, Kuala Lumpur: Malaysia.

Central Bank of Malaysia., (1997), *Annual Reports*, Government Printers, Kuala Lumpur: Malaysia.

Central Bank of Malaysia., (1998), *Annual Reports*, Government Printers, Kuala Lumpur: Malaysia.

Central Bank of Malaysia., (1999), *Annual Reports*, Government Printers, Kuala Lumpur: Malaysia.

Central Bank of Malaysia., (2000), *Annual Reports*, Government Printers, Kuala Lumpur: Malaysia

Department of Statistics., *Statistical Yearbook of External Trade*, Kuala Lumpur: Malaysia. (Various issues)

Economic Planning Unit., (1991), *The Second Outline Perspective Plan 1991-2000*, Percetakan National Malaysia Berhad, Kuala Lumpur: Malaysia.

Economic Planning Unit., (2001), *The Third Outline Perspective Plan 2001 – 2010*, Percetakan National Malaysia Berhad, Kuala Lumpur: Malaysia.

Economic Planning Unit., (2001), *Mid-Term Review of the Seventh Malaysia Plan 1996-2000*, Percetakan National Malaysia Berhad, Kuala Lumpur: Malaysia.

Economic Planning Unit., (1981), *Fourth Malaysia Plan, 1981-1985*, National Printing Department, Government of Malaysia, Kuala Lumpur: Malaysia.

Economic Planning Unit., (1986), *Fifth Malaysia Plan, 1986-1990*, National Printing Department, Government of Malaysia, Kuala Lumpur: Malaysia.

Economic Planning Unit., (1991), *Sixth Malaysia Plan, 1991-1995*, National Printing Department, Government of Malaysia, Kuala Lumpur: Malaysia.

Economic Planning Unit., (1996), *Seventh Malaysia Plan, 1996 – 2000*, National Printing Department, Government of Malaysia, Kuala Lumpur: Malaysia.

Economic Planning Unit., (2001), *Eighth Malaysia Plan, 2001 – 2005*, National Printing Department, Government of Malaysia, Kuala Lumpur: Malaysia.

Ministry of Finance., Malaysia, *Economic Reports*, Government Printers, Kuala Lumpur: Malaysia. (Various issues)

APPENDIX A

RESEARCH DATA

RESEARCH DATA, 1983-2001

YEAR	CPI	SPSD	SPST	IPS	GDRL	RD
1983	120.3	2.50	3.25	4.25	53,584.0	3.15
1984	124.6	2.46	3.23	4.73	57,745.3	3.25
1985	125.1	2.33	3.06	4.16	57,093.5	3.05
1986	125.8	2.45	3.26	4.36	57,750.0	3.00
1987	126.8	2.60	3.15	4.25	81,085.2	2.50
1988	130.0	2.46	3.25	4.15	89,143.1	3.00
1989	133.7	2.60	3.59	4.49	97,219.7	3.10
1990	137.8	2.57	4.14	5.34	105,977.0	3.03
1991	88.9	2.58	4.37	5.37	116,093.0	3.10
1992	93.1	2.46	4.40	5.43	126,408.0	3.08
1993	96.4	2.63	4.45	5.56	138,916.2	3.32
1994	100.0	2.60	4.52	5.62	151,713.3	3.05
1995	103.4	2.56	4.89	5.65	166,625.0	3.20
1996	107.0	2.36	4.99	5.85	183,292.0	3.26
1997	109.9	2.62	5.05	5.94	197,120.0	3.36
1998	95.8	2.60	5.14	6.14	182,331.8	3.44
1999	98.5	2.58	5.38	6.28	198,379.0	3.13
2000	100.5	2.43	5.46	6.36	209,658.0	3.00
2001	102.4	2.45	5.57	6.45	215,231.1	3.40

Sources:

Compiled by the author using data from the *Monthly Statistical Bulletin*, Central Bank of Malaysia. (Various issues)

Compiled by the author using data from the *Central Bank and the Financial System in Malaysia–A Decade of Change, 1989-1999*, Central Bank of Malaysia, 1999, pp. 610-662

Compiled by the author using data from the *Commercial Banks* and the *Finance Companies* in Malaysia. (Various issues)

RESEARCH DATA, 1983-2001

YEAR	RT	DDC	TDC	DDI	TDI	IID
1983	7.00	9,449.7	18,865.3	85.0	125.0	254.0
1984	8.25	10,311.3	20,779.4	127.1	195.1	331.1
1985	6.50	11,900.5	22,551.8	139.5	250.3	365.0
1986	6.50	12,666.7	23,773.3	168.2	290.7	406.5
1987	4.50	16,466.6	25,919.4	189.2	317.3	515.2
1988	4.00	18,814.9	28,931.0	213.7	342.2	652.7
1989	4.53	20,610.1	39,772.2	221.2	350.3	667.1
1990	4.85	21,196.8	43,549.0	231.8	275.3	672.6
1991	5.43	23,850.9	51,742.2	236.1	322.6	687.1
1992	5.34	24,527.1	58,411.6	341.2	334.3	667.8
1993	4.63	32,772.8	65,196.9	407.5	421.1	784.3
1994	4.99	37,002.2	68,732.1	1,425.9	1,491.0	1,673.2
1995	4.54	38,410.0	74,310.6	1,303.9	1,347.6	1,178.4
1996	4.70	49,442.6	95,130.5	1,720.9	1,796.8	4,525.9
1997	5.10	51,464.4	102,461.3	1,875.8	2,114.2	4,865.5
1998	5.23	53,272.0	103,860.9	2,368.4	4,572.3	6,732.8
1999	4.87	55,162.1	104,585.1	2,959.7	5,673.6	15,867.5
2000	4.50	59,042.5	106,325.7	4,560.4	6,763.4	19,929.8
2001	4.45	62,107.8	107,531.4	5,380.7	7,307.7	25,676.3

Notes: Monetary Base (MB) = Money in Circulation plus Total Reserve Money

Sources:

Compiled by the author using data from the *Monthly Statistical Bulletin*, Central Bank of Malaysia. (Various issues)

Compiled by the author using data from the *Central Bank and the Financial System in Malaysia–A Decade of Change, 1989-1999*, Central Bank of Malaysia, 1999, pp. 610-662

Compiled by the author using data from the *Commercial Banks* and the *Finance Companies* in Malaysia. (Various issues)

Compiled by the author using data from the *International Financial Statistics*, International Monetary Fund, IMF Statistics Department, IMF, Washington, D.C. USA. (Various issues)

RESEARCH DATE, 1983-2001

YEAR	MB
1983	15,460.8
1984	15,844.0
1985	16,249.2
1986	17,093.1
1987	18,420.5
1988	20,698.7
1989	24,897.0
1990	29,725.2
1991	34,119.0
1992	37,918.7
1993	42,113.2
1994	56,615.5
1995	66,244.0
1996	85,625.0
1997	107,428.0
1998	56,719.1
1999	76,157.8
2000	70,082.1
2001	73,292.7

Notes: Monetary Base (MB) = Money in Circulation plus Total Reserve Money

Source:

Compiled by the author using data from the *Monthly Statistical Bulletin*, Central Bank of Malaysia. (Various issues)

APPENDIX B

REGRESSION RESULTS

Remali Yusoff
Institute for Middle Eastern and Islamic Studies
University of Durham

Ordinary Least Squares Estimation

Model: MODEL1
Dependent Variable: LDDC

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Prob>F
Model	4	5.09308	1.27327	212.211	0.0001
Error	12	0.07196	0.00600		
C Total	16	5.16504			

Root MSE	0.07744	R-square	0.9861
Dep Mean	10.96147	Adj R-sq	0.9814
C.V.	0.70646		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|
INTERCEP	1	-4.724091	3.276060	-1.442	0.1749
LGDRL	1	1.175399	0.648846	1.812	0.0951
LRD	1	0.273101	0.146434	1.865	0.0885
LCPI	1	-0.124517	0.200897	-0.620	0.5470
LAG1DDC	1	0.529132	0.391205	1.353	0.1862

Durbin-Watson D	2.375
(For Number of Obs.)	17
1st Order Autocorrelation	-0.172

Model: MODEL2
Dependent Variable: LTDC

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Prob>F
Model	4	4.87894	1.21974	501.950	0.0001
Error	12	0.02916	0.00243		
C Total	16	4.90810			

Root MSE	0.04930	R-square	0.9941
Dep Mean	10.31586	Adj R-sq	0.9921
C.V.	0.47788		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|
INTERCEP	1	-2.957346	1.970124	-1.501	0.1558
LGDRL	1	1.726732	0.397071	4.349	0.0009
LRT	1	0.349893	0.071741	4.877	0.0004
LCPI	1	-0.136180	0.159076	-0.856	0.4087
LAG1TDC	1	0.149465	0.312762	0.478	0.6201

Durbin-Watson D	2.531
For Number of Obs.)	17
1st Order Autocorrelation	-0.278

The SAS System 5
13:01 Tuesday, March 5, 2002

Model: MODEL3
Dependent Variable: LDDI

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Prob>F
Model	4	32.03746	8.00937	420.660	0.0001
Error	12	1.30852	0.01904		
C Total	16	33.34598			

Root MSE	0.33022	R-square	0.9608
Dep Mean	6.65285	Adj R-sq	0.9477
C.V.	4.96354		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|
INTERCEP	1	-3.521726	1.907819	-1.845	0.0780
LGDRL	1	0.689539	0.978108	0.705	0.4943
LSPSD	1	1.390527	0.388090	3.583	0.0035
LCPI	1	-0.635911	1.005935	-0.632	0.5391
LAG1DDI	1	0.749517	0.314660	2.382	0.0394

The SAS System 6
13:01 Tuesday, March 5, 2002

Durbin-Watson D	2.388
(For Number of Obs.)	17
1st Order Autocorrelation	-0.196

The SAS System 7
13:01 Tuesday, March 5, 2002

Model: MODEL4
Dependent Variable: LTDI

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Prob>F
Model	4	18.17410	4.54352	284.503	0.0001
Error	12	1.39168	0.01597		
C Total	16	19.56578			

Root MSE	0.34055	R-square	0.9289
Dep Mean	6.72202	Adj R-sq	0.9052
C.V.	5.06617		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|
INTERCEP	1	-3.813234	1.930612	-1.975	0.0746
LGDRL	1	0.658562	0.942919	0.698	0.4982
LSPST	1	1.252651	0.674919	1.856	0.0785
LCPI	1	-0.262318	1.066281	-0.246	0.8098
LAG1TDI	1	0.776406	0.272631	2.848	0.0147

The SAS System 8
13:01 Tuesday, March 5, 2002

Durbin-Watson D	2.109
(For Number of Obs.)	17
1st Order Autocorrelation	-0.074

The SAS System 9
13:01 Tuesday, March 5, 2002

Model: MODEL5
Dependent Variable: LIID

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Prob>F
Model	4	31.37997	7.84499	139.590	0.0001
Error	12	1.87442	0.05620		
C Total	16	33.25438			

Root MSE	0.39522	R-square	0.9436
Dep Mean	7.48768	Adj R-sq	0.9248
C.V.	5.27831		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|
INTERCEP	1	-3.743583	2.631728	-1.422	0.1765
LGDRL	1	0.242672	0.134593	1.803	0.0896
LIPS	1	1.718823	0.619460	2.774	0.0145
LCPI	1	-0.719866	1.089134	-0.661	0.5212
LAG1IID	1	0.758722	0.275356	2.755	0.0151

The SAS System 10
13:01 Tuesday, March 5, 2002

Durbin-Watson D	2.173
(For Number of Obs.)	17
1st Order Autocorrelation	-0.087

APPENDIX C

SIMULATION RESULTS

Remali Yusoff
Institute for Middle Eastern and Islamic Studies
University of Durham

Simulation Results

SIMULATE KLEIN'S MODEL I USING SIMLIN 1
12:11 Thursday, April 11, 2002

OBS	YEAR	CPI	SPSD	IPS	SPST	GDRL	RD	RT	LCPI
1	1983	120.3	2.50	4.25	3.25	53584.0	3.15	7.00	4.78999
2	1984	124.6	2.46	4.23	3.23	57745.3	3.25	8.25	4.82511
3	1985	125.1	2.33	4.06	3.06	57093.5	3.05	6.50	4.82911
4	1986	125.8	2.45	4.36	3.26	57750.5	3.00	6.50	4.83469
5	1987	126.8	2.60	4.25	3.15	60863.2	2.50	4.50	4.84261
6	1988	130.0	2.46	4.15	3.25	66303.1	3.00	4.00	4.86753
7	1989	133.7	2.60	4.49	3.59	72409.7	3.10	4.53	4.89560
8	1990	137.8	2.57	5.34	4.14	79463.0	3.03	4.85	4.92580
9	1991	88.9	2.58	5.37	4.37	86345.0	3.10	5.43	4.48751
10	1992	93.1	2.46	5.43	4.40	93072.0	3.08	5.34	4.53367
11	1993	96.4	2.63	5.56	4.45	100838.2	3.32	4.63	4.56851
12	1994	100.0	2.60	5.62	4.52	103932.3	3.05	4.99	4.60517
13	1995	103.4	2.56	5.65	4.89	113595.0	3.20	4.54	4.63860
14	1996	107.0	2.36	5.85	4.99	123138.0	3.26	4.70	4.67283
15	1997	109.9	2.62	5.94	5.05	133588.0	3.36	5.10	4.69957
16	1998	95.8	2.60	6.14	5.14	138542.8	3.44	5.23	4.56226
17	1999	98.5	2.58	6.28	5.38	143879.0	3.13	4.87	4.59006
18	2000	100.5	2.43	6.36	5.46	149658.0	3.00	4.50	4.60517
19	2001	102.4	2.45	6.45	5.57	150231.1	3.40	4.45	4.62889

OBS	LSPSD	LIPS	LSPST	LGDRL	LRD	LRT
1	0.91629	1.44692	1.17865	10.8890	1.14740	1.94591
2	0.90016	1.44220	1.17248	10.9638	1.17865	2.11021
3	0.84587	1.40118	1.11841	10.9524	1.11514	1.87180
4	0.89609	1.47247	1.18173	10.9639	1.09861	1.87180
5	0.95551	1.44692	1.14740	11.0164	0.91629	1.50408
6	0.90016	1.42311	1.17865	11.1020	1.09861	1.38629
7	0.95551	1.50185	1.27815	11.1901	1.13140	1.51072
8	0.94391	1.67523	1.42069	11.2830	1.10856	1.57898
9	0.94779	1.68083	1.47476	11.3661	1.13140	1.69194
10	0.90016	1.69194	1.48160	11.4411	1.12493	1.67522
11	0.96698	1.71560	1.49290	11.5213	1.19996	1.53255
12	0.95551	1.72633	1.50851	11.5515	1.11514	1.60743
13	0.94001	1.73166	1.58719	11.6404	1.16315	1.51293
14	0.85866	1.76644	1.60743	11.7211	1.18173	1.54756
15	0.96317	1.78171	1.61939	11.8025	1.21194	1.62924
16	0.95551	1.81482	1.63705	11.8389	1.23547	1.65441
17	0.94778	1.83737	1.68269	11.8767	1.14103	1.58309
18	0.88789	1.85003	1.69745	11.9161	1.09861	1.50407
19	0.89608	1.86408	1.71739	11.9199	1.22377	1.49290

SIMULATE KLEIN'S MODEL I USING SIMLIN 2
12:11 Thursday, April 11, 2002

OBS	**DDC**	**TDC**
1	9449.7	18865.3
2	10311.3	20779.4
3	11900.5	22551.8
4	12666.7	23773.3
5	16466.6	25919.4
6	18814.9	28931.0
7	20610.1	39772.2
8	21196.8	43549.0
9	23850.9	51742.2
10	24527.1	58411.6
11	32772.8	65196.9
12	37002.2	68732.1
13	38410.0	74310.6
14	49442.6	95130.5
15	51464.4	102461.3
16	53272.0	103860.9
17	55162.1	104585.1
18	59042.5	106325.7
19	62107.8	107531.4

OBS	DATE	**LDDC**	**LTDC**
1	JAN83	9.1537	9.8451
2	JAN84	9.2410	9.9417
3	JAN85	9.3843	10.0236
4	JAN86	9.4467	10.0763
5	JAN87	9.7091	10.1627
6	JAN88	9.8424	10.2727
7	JAN89	9.9335	10.5909
8	JAN90	9.9616	10.6816
9	JAN91	10.0796	10.8540
10	JAN92	10.1075	10.9753
11	JAN93	10.3974	11.0852
12	JAN94	10.5187	11.1380
13	JAN95	10.5561	11.2160
14	JAN96	10.8086	11.4630
15	JAN97	10.8486	11.5372
16	JAN98	10.8832	11.5508
17	JAN99	10.9180	11.5578
18	JAN00	10.9860	11.5743
19	JAN01	11.0366	11.5855

SIMULATE KLEIN'S MODEL I USING SIMLIN 3
12:11 Thursday, April 11, 2002

OBS	LAG1DDC	LAG1TDC	**DDI**
1	.	.	85.0
2	9.1537	9.8451	127.1
3	9.2410	9.9417	139.5
4	9.3843	10.0236	168.2
5	9.4467	10.0763	189.2
6	9.7091	10.1627	213.7
7	9.8424	10.2727	221.2
8	9.9335	10.5909	231.8
9	9.9616	10.6816	236.1
10	10.0796	10.8540	334.3
11	10.1075	10.9753	407.5

12	10.3974	11.0852	1425.9
13	10.5187	11.1380	1303.9
14	10.5561	11.2160	1720.9
15	10.8086	11.4630	1875.8
16	10.8486	11.5372	2368.4
17	10.8832	11.5508	2959.7
18	10.9180	11.5578	4560.4
19	10.9860	11.5743	5380.7

OBS	**TDI**	**IID**	**LDDI**	**LTDI**	**LIID**	LAG1DDI	LAG1TDI	LAG1IID
1	125.0	254.0	4.44265	4.82831	5.5373	.	.	.
2	195.1	331.1	4.84497	5.27351	5.8024	4.44265	4.82831	5.53733
3	250.3	365.0	4.93806	5.52266	5.8999	4.84497	5.27351	5.80242
4	290.7	406.5	5.12515	5.67229	6.0076	4.93806	5.52266	5.89990
5	317.3	515.2	5.24280	5.75985	6.2446	5.12515	5.67229	6.00758
6	342.2	652.7	5.36457	5.83540	6.4811	5.24280	5.75985	6.24456
7	350.3	667.1	5.39907	5.85879	6.5029	5.36457	5.83540	6.48112
8	275.3	672.6	5.44587	5.61786	6.5112	5.39907	5.85879	6.50294
9	322.6	687.1	5.46426	5.77641	6.5325	5.44587	5.61786	6.51115
10	341.2	667.8	5.81204	5.83247	6.5040	5.46426	5.77641	6.53248
11	421.1	784.3	6.01004	6.04287	6.6648	5.81204	5.83247	6.50399
12	1491.0	1673.2	7.26256	7.30720	7.4225	6.01004	6.04287	6.66479
13	1347.6	1178.4	7.17312	7.20608	7.0719	7.26256	7.30720	7.42249
14	1796.8	4525.9	7.45060	7.49376	8.4176	7.17312	7.20608	7.07191
15	2114.2	4865.5	7.53679	7.65643	8.4899	7.45060	7.49376	8.41757
16	4572.3	6732.8	7.76997	8.42777	8.8147	7.53679	7.65643	8.48992
17	5673.6	15867.5	7.99284	8.64358	9.6720	7.76997	8.42777	8.81475
18	6763.4	19929.8	8.42517	8.81928	9.9000	7.99284	8.64358	9.67203
19	7307.7	25676.3	8.59057	8.89668	10.1533	8.42517	8.81928	9.89997

OBS	**LDDCHAT**	**LTDCHAT**
1	9.1968	9.7342
2	9.2531	9.8347
3	9.3649	10.0476
4	9.4151	10.1227
5	9.6839	10.2401
6	9.8484	10.3693
7	9.9223	10.4852
8	9.9939	10.6017
9	10.0467	10.7781
10	10.1941	10.9099
11	10.4192	11.0508
12	10.4959	11.1214
13	10.6210	11.2329
14	10.7498	11.3492
15	10.8128	11.4546
16	10.8589	11.5426
17	10.9284	11.6069
18	11.0012	11.6684
19	11.0157	11.6868

SIMULATE KLEIN'S MODEL I USING SIMLIN 5
12:11 Thursday, April 11, 2002

SYSLIN Procedure
Ordinary Least Squares Estimation

Model: LDDC
Dependent variable: LDDC

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Prob>F
Model	4	5.09308	1.27327	212.211	0.0001
Error	12	0.07196	0.00600		
C Total	16	5.16504			

Root MSE	0.07744	R-Square	0.9861
Dep Mean	10.96147	Adj R-SQ	0.9814
C.V.	0.70646		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|
INTERCEP	1	-4.724091	3.276060	-1.442	0.1749
LGDRL	1	1.175399	0.648846	1.812	0.0951
LRD	1	0.273101	0.146434	1.865	0.0885
LCPI	1	-0.124517	0.200897	-0.620	0.5470
LAG1DDC	1	0.529132	0.391205	1.353	0.1862

Durbin-Watson	2.375
(For Number of Obs.)	17
1st Order Autocorrelation	-0.172

SIMULATE KLEIN'S MODEL I USING SIMLIN 6
12:11 Thursday, April 11, 2002

SYSLIN Procedure
Ordinary Least Squares Estimation

Model: LTDC
Dependent variable: LTDC

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Prob>F
Model	4	4.87894	1.21974	501.950	0.0001
Error	12	0.02916	0.00243		
C Total	16	4.90810			

Root MSE	0.04930	R-Square	0.9941
Dep Mean	10.31586	Adj R-SQ	0.9921
C.V.	0.47788		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|
INTERCEP	1	-2.957346	1.970124	-1.501	0.1558
LGDRL	1	1.726732	0.397071	4.349	0.0009
LRT	1	0.349893	0.071741	4.877	0.0004
LCPI	1	-0.136180	0.159076	-0.856	0.4087
LAG1TDC	1	0.149465	0.312762	0.478	0.6201

Durbin-Watson	2.531
(For Number of Obs.)	17
1st Order Autocorrelation	-0.278

SIMULATE KLEIN'S MODEL I USING SIMLIN 7
12:11 Thursday, April 11, 2002

SYSLIN Procedure
Ordinary Least Squares Estimation

Model: LDDI
Dependent variable: LDDI

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Prob>F
Model	4	32.03746	8.00937	420.660	0.0001
Error	12	1.30852	0.01904		
C Total	16	33.34598			

Root MSE	0.33022	R-Square	0.9608
Dep Mean	6.65285	Adj R-SQ	0.9477
C.V.	4.96354		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|
INTERCEP	1	-3.521726	1.907819	-1.845	0.0780
LGDRL	1	0.689539	0.978108	0.705	0.4943
LSPSD	1	1.390527	0.388090	3.583	0.0035
LCPI	1	-0.635911	1.005935	-0.632	0.5391
LAG1DDI	1	0.749517	0.314660	2.382	0.0394

Durbin-Watson	2.388
(For Number of Obs.)	17
1st Order Autocorrelation	-0.196

SIMULATE KLEIN'S MODEL I USING SIMLIN 8
12:11 Thursday, April 11, 2002

SYSLIN Procedure
Ordinary Least Squares Estimation

Model: LTDI
Dependent variable: LTDI

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Prob>F
Model	4	18.17410	4.54352	284.503	0.0001
Error	12	1.39168	0.01597		
C Total	16	19.56578			

Root MSE	0.34055	R-Square	0.9289
Dep Mean	6.72202	Adj R-SQ	0.9052
C.V.	5.06617		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|
INTERCEP	1	-3.813234	1.930612	-1.975	0.0746
LGDRL	1	0.658562	0.942919	0.698	0.4982
LSPST	1	1.252651	0.674919	1.856	0.0785
LCPI	1	-0.262318	1.066281	-0.246	0.8098
LAG1TDI	1	0.776406	0.272631	2.848	0.0147

Durbin-Watson	2.109
(For Number of Obs.)	17
1st Order Autocorrelation	-0.074

SIMULATE KLEIN'S MODEL I USING SIMLIN 9
12:11 Thursday, April 11, 2002

SYSLIN Procedure
Ordinary Least Squares Estimation

Model: LIID
Dependent variable: LIID

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Prob>F
Model	4	31.37997	7.84499	139.590	0.0001
Error	12	1.87442	0.05620		
C Total	16	33.25438			

Root MSE	0.39522	R-Square	0.9436
Dep Mean	7.48768	Adj R-SQ	0.9248
C.V.	5.27831		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|
INTERCEP	1	-3.743583	2.631728	-1.422	0.1765
LGDRL	1	0.242672	0.134593	1.803	0.0896
LIPS	1	1.718823	0.619460	2.774	0.0145
LCPI	1	-0.719866	1.089134	-0.661	0.5212
LAG1IID	1	0.758722	0.275356	2.755	0.0151

Durbin-Watson	2.173
(For Number of Obs.)	17
1st Order Autocorrelation	-0.087

SIMULATE KLEIN'S MODEL I USING SIMLIN 10
12:11 Thursday, April 11, 2002

OBS	TYPE	MODEL	DEPVAR	SSIGMA	INTERCEP	LLDDC	LLTDDC	LLDDDI	LLTDDI	LLIDD	LGDRL	LRD	LRT
1	OLS	LDDC	LDDC	0.07744	-4.7241	-1	.	.	.	.	1.17540	0.27310	
2	OLS	LTDC	LTDC	0.04930	-2.9573	.	-1	.	.	.	1.72673	.	0.34989
3	OLS	LDDI	LDDI	0.33022	-3.5217	.	.	-1	.	.	0.68953	.	.
4	OLS	LTDI	LTDI	0.34055	-3.8132	.	.	.	-1	.	0.65856	.	.
5	OLS	LIID	LIID	0.39522	-3.7436	.	.	.	.	-1	0.24267	.	.

OBS	LCPI	LAG1DDC	LAG1TDC	LSPSD	LSPST	LAG1DDI	LAG1TDI	LIPS	LAG1IID
1	-0.12452	0.52913	.	.	.	.	.	.	.
2	-0.13618	.	0.14946	.	.	.	.	.	.
3	-0.63591	.	.	1.39052	.	0.74952	.	.	.
4	-0.26232	.	.	.	1.25265	.	0.77641	.	.
5	-0.71987	.	.	.	.	.	1.71882	0.75872	

SIMULATE KLEIN'S MODEL I USING SIMLIN 11
12:11 Thursday, April 11, 2002

SIMLIN Procedure

Structural Coefficients for Endogenous Variables

	LDDC	LTDC	LDDI	LTDI	LIID
LDDC	1.0000	.	.	.	.
LTDC	.	1.0000	.	.	.
LDDI	.	.	1.0000	.	.
LTDI	.	.	.	1.0000	.
LIID	.	.	.	.	1.0000

Structural Coefficients for Lagged Endogenous Variables

	LAG1DDC	LAG1TDC	LAG1DDI	LAG1TDI	LAG1IID
LDDC	0.5291	.	.	.	.
LTDC	.	0.1494	.	.	.
LDDI	.	.	0.7495	.	.
LTDI	.	.	.	0.7764	.
LIID	.	.	.	.	0.7587

Structural Coefficients for Exogenous Variables

	LGDRL	LRD	LRT	LCPI	LSPSD	LSPST	LIPS	INTERCEP
LDDC	1.1754	0.2731		-0.1245				-4.7241
LTDC	1.7267		0.3499	-0.1362				-2.9573
LDDI	0.6895			-0.6359	1.3905			-3.5217
LTDI	0.6586			-0.2623		1.2526		-3.8132
LIID	0.2426			-0.7199			1.7188	-3.7436

SIMULATE KLEIN'S MODEL I USING SIMLIN 12
12:11 Thursday, April 11, 2002

SIMLIN Procedure

Inverse Coefficient Matrix for Endogenous Variables

	LDDC	LTDC	LDDI	LTDI	LIID
LDDC	1.0000	0	0	0	0
LTDC	0	1.0000	0	0	0
LDDI	0	0	1.0000	0	0
LTDI	0	0	0	1.0000	0
LIID	0	0	0	0	1.0000

Reduced Form for Lagged Endogenous Variables

	LAG1DDC	LAG1TDC	LAG1DDI	LAG1TDI	LAG1IID
LDDC	0.5291	0	0	0	0
LTDC	0	0.1495	0	0	0
LDDI	0	0	0.7495	0	0
LTDI	0	0	0	0.7764	0
LIID	0	0	0	0	0.7587

Reduced Form for Exogenous Variables

	LGDRL	LRD	LRT	LCPI	LSPSD	LSPST	LIPS	INTERCEP
LDDC	1.1754	0.2731		-0.1245	0	0	0	-4.7241
LTDC	1.7267		0.3499	-0.1362	0	0	0	-2.9573
LDDI	0.6895		0	-0.6359	1.3905	0	0	-3.5217
LTDI	0.6586		0	-0.2623		1.2527	0	-3.8132
LIID	0.2427		0	-0.7199		0	1.7188	-3.7436

SIMULATE KLEIN'S MODEL I USING SIMLIN 13
12:11 Thursday, April 11, 2002

SIMLIN Procedure

Statistics of Fit

Variable	N	Mean Error	Mean % Error	Mean Abs Error	Mean Abs % Error
LDDC	18	0.0102	0.0940	0.0664	0.61233
LTDC	18	0.0768	0.9345	0.0322	0.31409
LDDI	18	0.0710	0.9220	0.2202	2.50197
LTDI	18	0.0724	0.9276	0.2355	2.51714
LIID	18	0.0940	0.9951	0.2733	2.61782

Statistics of Fit

Variable	RMS Error	RMS % Error
LDDC	0.0746	0.6889
LTDC	0.0398	0.3897
LDDI	0.2737	2.4623
LTDI	0.2845	2.6979
LIID	0.2956	3.0664

SIMULATE KLEIN'S MODEL I USING SIMLIN 14
12:11 Thursday, April 11, 2002

OBS	YEAR	**LDDC**	**LTDC**	**LDDI**	**LTDI**	**LIID**	LGDRL
1	1983	9.1537	9.8451	4.44265	4.82831	5.5373	10.8890
2	1984	9.2410	9.9417	4.84497	5.27351	5.8024	10.9638
3	1985	9.3843	10.0236	4.93806	5.52266	5.8999	10.9524
4	1986	9.4467	10.0763	5.12515	5.67229	6.0076	10.9639
5	1987	9.7091	10.1627	5.24280	5.75985	6.2446	11.0164
6	1988	9.8424	10.2727	5.36457	5.83540	6.4811	11.1020
7	1989	9.9335	10.5909	5.39907	5.85879	6.5029	11.1901
8	1990	9.9616	10.6816	5.44587	5.61786	6.5112	11.2830
9	1991	10.0796	10.8540	5.46426	5.77641	6.5325	11.3661
10	1992	10.1075	10.9753	5.81204	5.83247	6.5040	11.4411

OBS	LRD	LRT	LCPI	LSPSD	LSPST	LIPS
1	1.14740	1.94591	4.78999	0.91629	1.17865	1.44692
2	1.17865	2.11021	4.82511	0.90016	1.17248	1.44220
3	1.11514	1.87180	4.82911	0.84587	1.11841	1.40118
4	1.09861	1.87180	4.83469	0.89609	1.18173	1.47247
5	0.91629	1.50408	4.84261	0.95551	1.14740	1.44692
6	1.09861	1.38629	4.86753	0.90016	1.17865	1.42311
7	1.13140	1.51072	4.89560	0.95551	1.27815	1.50185
8	1.10856	1.57898	4.92580	0.94391	1.42069	1.67523
9	1.13140	1.69194	4.48751	0.94779	1.47476	1.68083
10	1.12493	1.67522	4.53367	0.90016	1.48160	1.69194

OBS	LAG1DDC	LAG1TDC	LAG1DDI
1	.	.	.
2	9.1537	9.8451	4.44265
3	9.2410	9.9417	4.84497
4	9.3843	10.0236	4.93806

5	9.4467	10.0763	5.12515
6	9.7091	10.1627	5.24280
7	9.8484	10.2727	5.36457
8	9.9335	10.5909	5.39907
9	9.9616	10.6816	5.44587
10	10.0796	10.8540	5.46426

OBS	LAG1TDI	LAG1IID	**LDDCHAT**	**LTDCHAT**	**LDDIHAT**	**LTDIHAT**	**LIIDHAT**
1	.	.	9.1968	9.7342	4.52178	4.93768	5.47958
2	4.82831	5.53733	9.2531	9.8347	4.79867	5.26372	5.57819
3	5.27351	5.57819	9.3649	10.0476	4.88585	5.34705	5.66269
4	5.34705	5.66269	9.4151	10.1227	4.94015	5.42164	5.61878
5	5.42164	5.61878	9.6839	10.2401	5.04541	5.52623	5.76456
6	5.52623	5.76456	9.8484	10.3693	5.17512	5.63488	6.13524
7	5.63488	6.13524	9.9223	10.4852	5.35938	5.78104	6.48187
8	5.78104	6.48187	9.9939	10.6017	5.56475	5.93656	6.64283
9	5.93656	6.64283	10.0467	10.7781	5.95794	6.21996	6.62889
10	6.21996	6.62889	10.1941	10.9099	6.27785	6.44782	6.80676

OBS	YEAR	**LDDC**	**LTDC**	**LDDI**	**LTDI**	**LIID**	LGDRL
11	1993	10.3974	11.0852	6.04287	6.01004	6.6648	11.5213
12	1994	10.5187	11.1380	7.26256	7.30720	7.4225	11.5515
13	1995	10.5561	11.2160	7.17312	7.20608	7.0719	11.6404
14	1996	10.8086	11.4630	7.45060	7.49376	8.4176	11.7211
15	1997	10.8486	11.5372	7.53679	7.65643	8.4899	11.8025
16	1998	10.8832	11.5508	7.76997	8.42777	8.8147	11.8389
17	1999	10.9180	11.5578	7.99284	8.64358	9.6720	11.8767
18	2000	10.9860	11.5743	8.42517	8.81928	9.9000	11.9161
19	2001	11.0366	11.5855	8.59057	8.89668	10.1533	11.9199

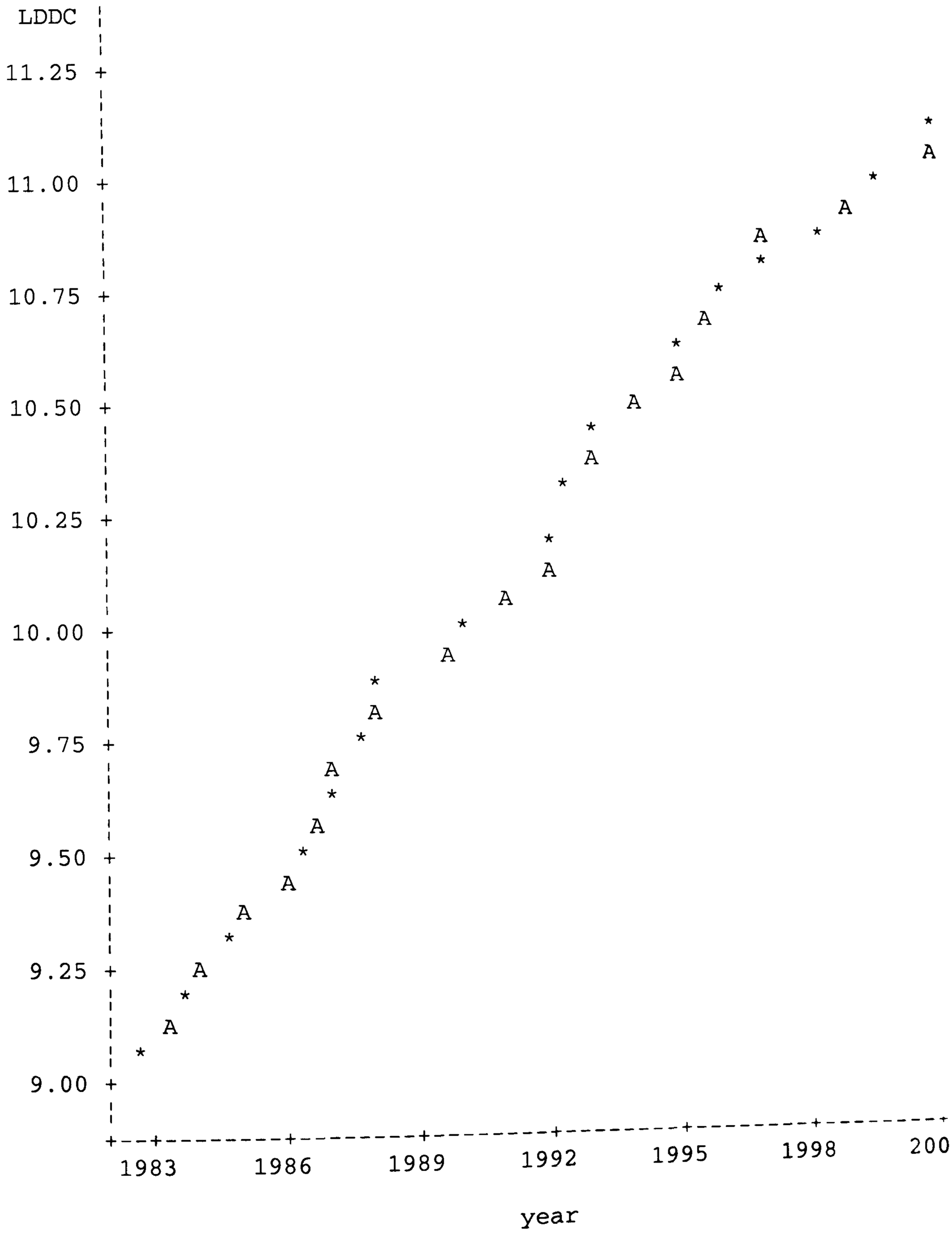
OBS	LRD	LRT	LCPI	LSPSD	LSPST	LIPS
11	1.19996	1.53255	4.56851	0.96698	1.49290	1.71560
12	1.11514	1.60743	4.60517	0.95551	1.50851	1.72633
13	1.16315	1.51293	4.63860	0.94001	1.58719	1.73166
14	1.18173	1.54756	4.67283	0.85866	1.60743	1.76644
15	1.23547	1.62924	4.69957	0.96317	1.61939	1.78171
16	1.23547	1.65441	4.56226	0.95551	1.63705	1.81482
17	1.14103	1.58309	4.59006	0.94778	1.68269	1.83737
18	1.09861	1.50407	4.60517	0.88789	1.69745	1.85003
19	1.22377	1.49290	4.62889	0.89608	1.71739	1.86408

OBS	LAG1DDC	LAG1TDC	LAG1DDI
11	10.1075	10.9753	5.83247
12	10.3974	11.0852	6.04287
13	10.5187	11.1380	6.84915
14	10.5561	11.2160	7.01899
15	10.8086	11.4630	7.34829
16	10.8586	11.5372	7.53679
17	10.8832	11.5508	7.92851
18	10.9180	11.5578	8.14569
19	10.9860	11.5743	8.31468

OBS	LAG1TDI	LAG1IID	**LDDCHAT**	**LTDCHAT**	**LDDIHAT**	**LTDIHAT**	**LIIDHAT**
11	6.44782	6.80676	10.4192	11.0508	6.59162	6.67672	6.78434
12	6.67672	7.10434	10.4959	11.1214	6.82723	6.84915	7.39813
13	7.26256	7.39813	10.6210	11.2329	7.01899	7.06297	7.13486
14	7.20608	7.83486	10.7498	11.3492	7.34829	7.46815	8.30072
15	7.45060	8.30072	10.8128	11.4546	7.65087	7.84432	8.62163
16	7.65087	8.82163	10.8589	11.5426	7.92851	8.19856	9.02475
17	8.42777	9.12475	10.9284	11.6069	8.14569	8.47600	9.41136
18	8.64358	9.41136	11.0012	11.6684	8.31468	8.69547	9.79843
19	8.81928	9.69943	11.0157	11.6868	8.49464	8.84851	10.09866

SIMULATE KLEIN'S MODEL I USING SIMLIN 16
12:11 Thursday, April 11, 2002

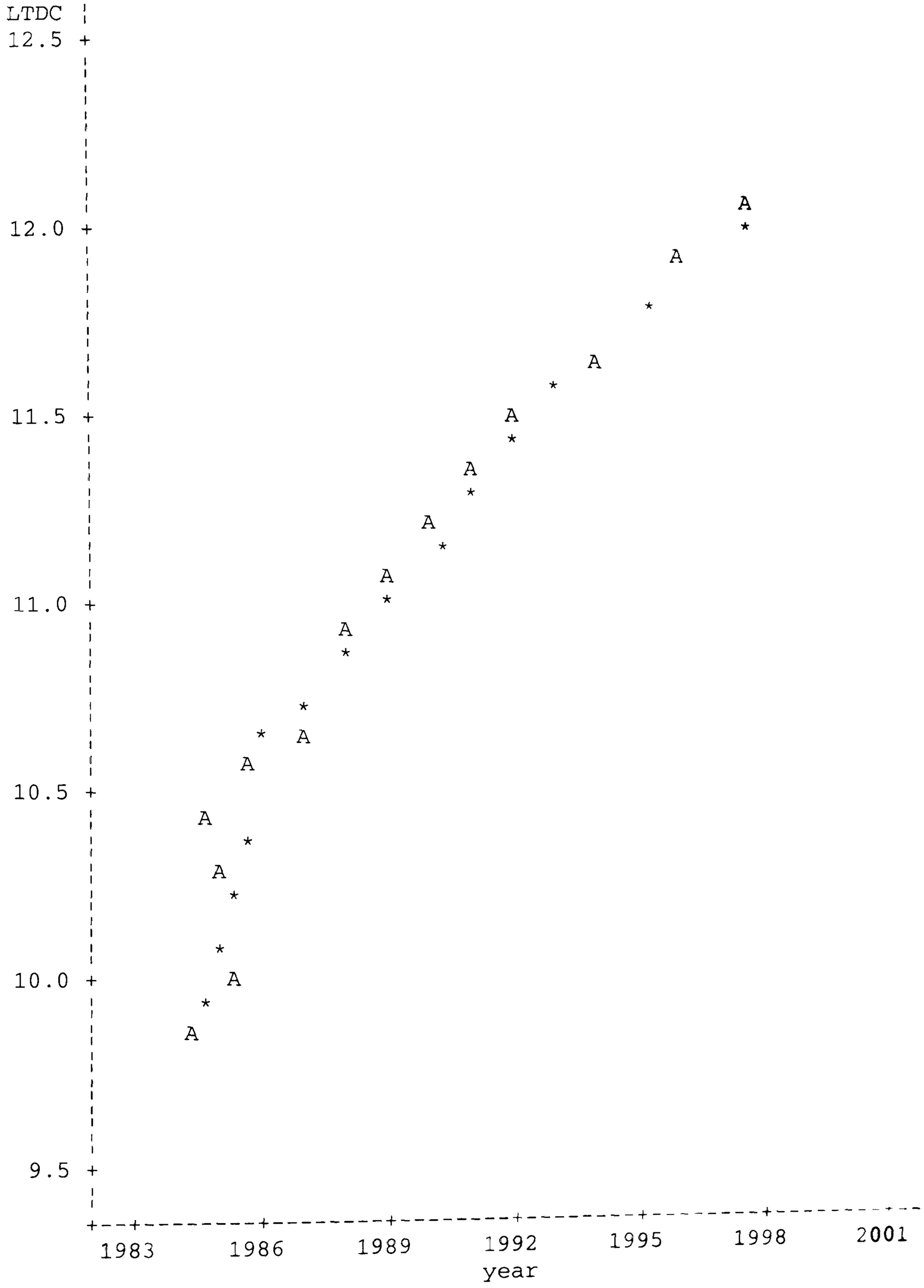
Plot of LDDC*YEAR. Legend: A = 1 obs, B = 2 obs, etc.
Plot of LDDCHAT*YEAR. Symbol used is '*'.



NOTE: 1 obs had missing values. 10 obs hidden.

SIMULATE KLEIN'S MODEL I USING SIMLIN 17
12:11 Thursday, April 11, 2002

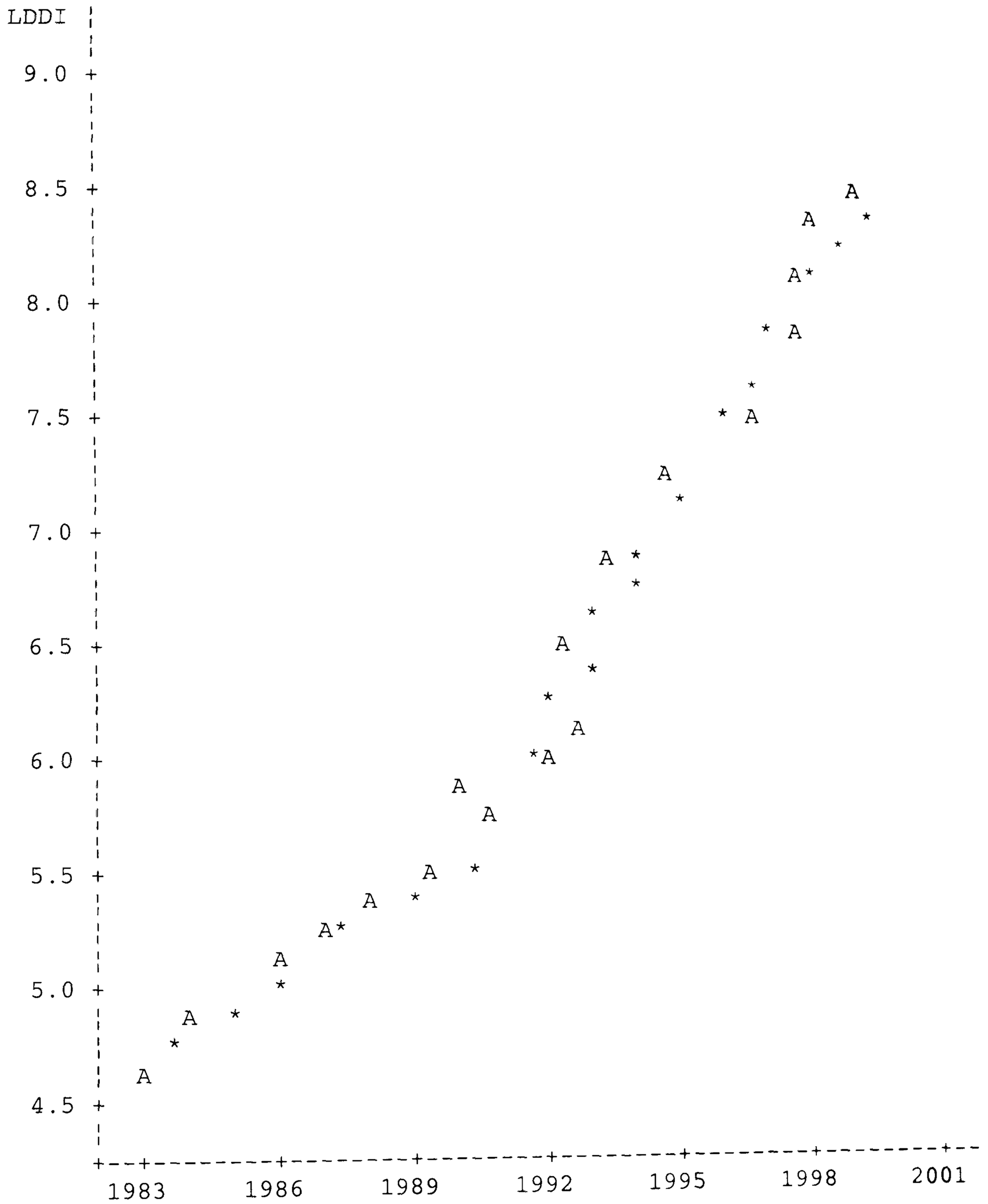
Plot of LTDC*YEAR. Legend: A = 1 obs, B = 2 obs, etc.
Plot of LTDCHAT*YEAR. Symbol used is '*'.



NOTE: 1 obs had missing values. 5 obs hidden.

SIMULATE KLEIN'S MODEL I USING SIMLIN 18
12:11 Thursday, April 11, 2002

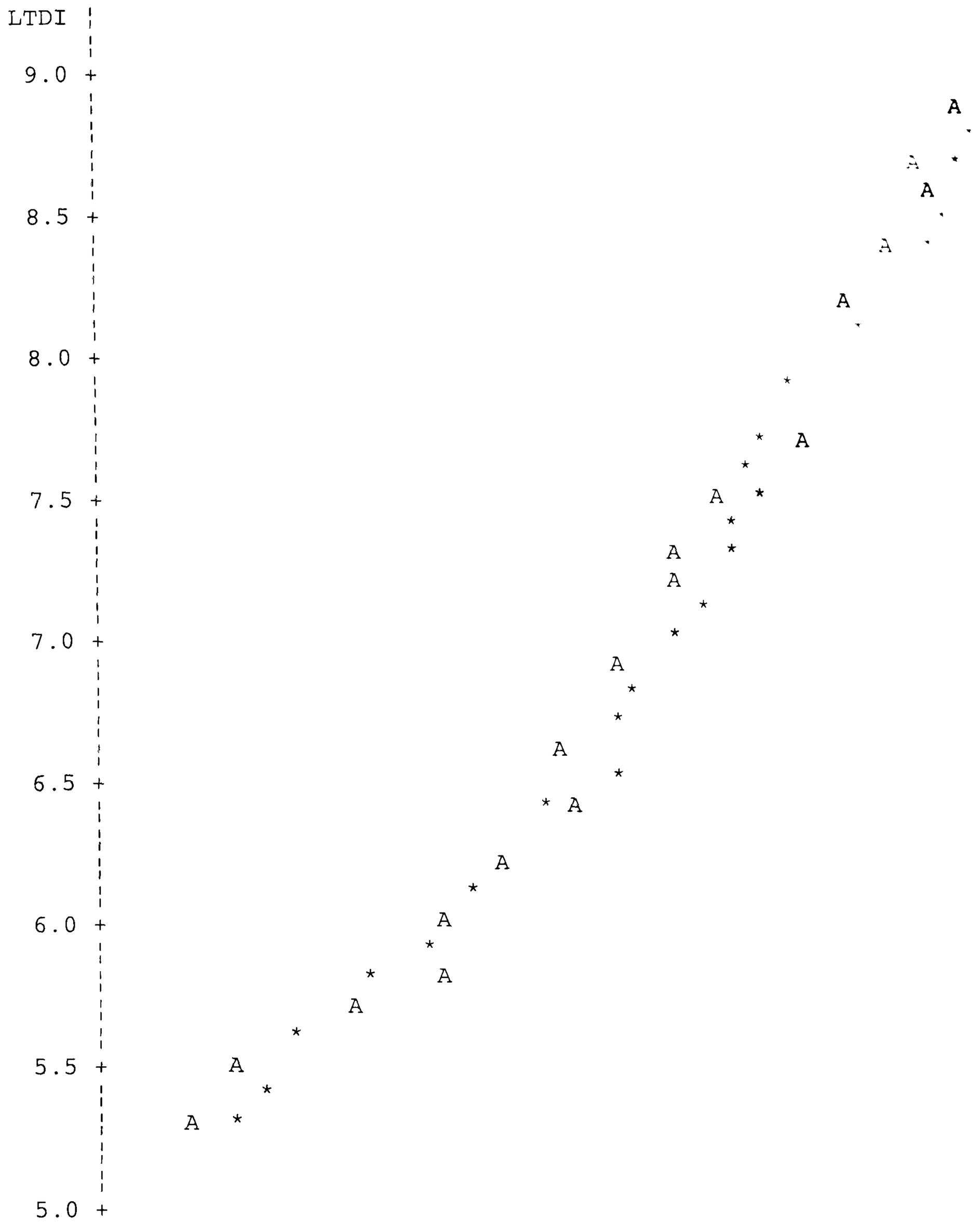
Plot of LDDI*YEAR. Legend: A = 1 obs, B = 2 obs, etc.
Plot of LDDIHAT*YEAR. Symbol used is '*'.



NOTE: 1 obs had missing values. 3 obs hidden.

SIMULATE KLEIN'S MODEL I USING SIMLIN 19
12:11 Thursday, April 11, 2002

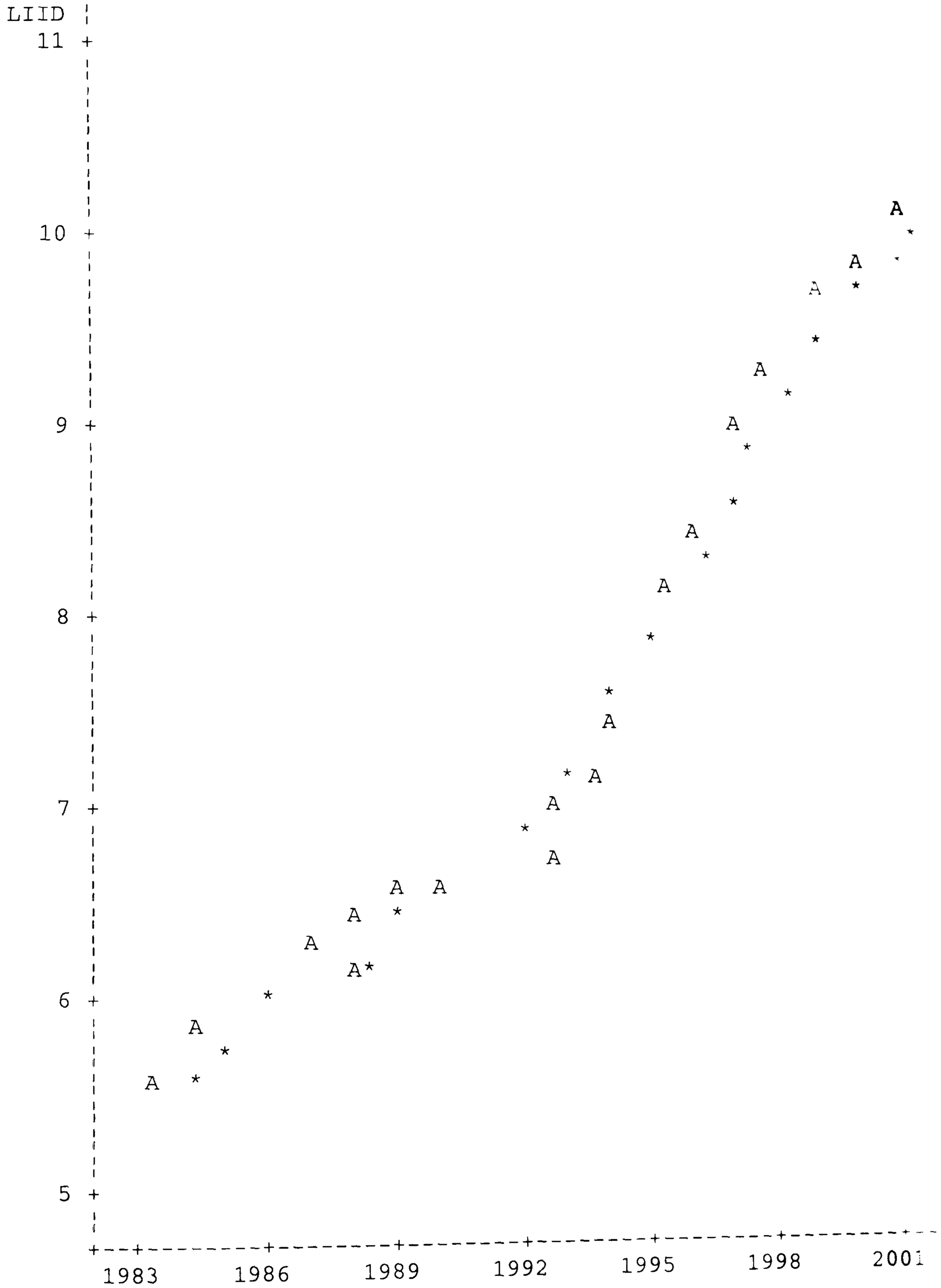
Plot of LTDI*YEAR. Legend: A = 1 obs, B = 2 obs, etc.
Plot of LTDIHAT*YEAR. Symbol used is '*'.



NOTE: 1 obs had missing values. 1 obs hidden.

```
                SIMULATE KLEIN'S MODEL I USING SIMLIN                    20
                                                  12:11 Thursday, April 11, 2002

   Plot of LIID*YEAR.      Legend: A = 1 obs, B = 2 obs, etc.
   Plot of LIIDHAT*YEAR.   Symbol used is '*'.
```




```
NOTE: 1 obs had missing values.  3 obs hidden.
```

APPENDIX D

THEIL'S INEQUALITY COEFFICIENT RESULTS

Remali Yusoff
Institute for Middle Eastern and Islamic Studies
University of Durham

Theil's Inequality Coefficient Results (U Statistics)

The SAS System 1
11:51 Tuesday, June 11, 2002

OBS	YEAR	CPI	SPSD	IPS	SPST	GDRL	RD	RT
1	1983	120.3	2.50	4.25	3.25	53584.0	3.15	7.00
2	1984	124.6	2.46	4.23	3.23	57745.3	3.25	8.25
3	1985	125.1	2.33	4.06	3.06	57093.5	3.05	6.50
4	1986	125.8	2.45	4.36	3.26	57750.0	3.00	6.50
5	1987	126.8	2.60	4.25	3.15	60863.2	2.50	4.50
6	1988	130.0	2.46	4.15	3.25	66303.1	3.00	4.00
7	1989	133.7	2.60	4.49	3.59	72409.7	3.10	4.53
8	1990	137.8	2.57	5.34	4.14	79463.0	3.03	4.85
9	1991	88.9	2.58	5.37	4.37	86345.0	3.10	5.43
10	1992	93.1	2.46	5.43	4.40	93072.0	3.08	5.34
11	1993	96.4	2.63	5.56	4.45	100838.2	3.32	4.63
12	1994	100.0	2.60	5.62	4.52	103932.3	3.05	4.99
13	1995	103.4	2.56	5.65	4.89	113595.0	3.20	4.54
14	1996	107.0	2.36	5.85	4.99	123138.0	3.26	4.70
15	1997	109.9	2.62	5.94	5.05	133588.0	3.36	5.10

OBS	LCPI	LSPSD	LIPS	LSPST	LGDRL	LRD
1	4.78999	0.91629	1.44692	1.17865	10.8890	1.14740
2	4.82511	0.90016	1.44220	1.17248	10.9638	1.17865
3	4.82911	0.84587	1.40118	1.11841	10.9524	1.11514
4	4.83469	0.89609	1.47247	1.18173	10.9639	1.09861
5	4.84261	0.95551	1.44692	1.14740	11.0164	0.91629
6	4.86753	0.90016	1.42311	1.17865	11.1020	1.09861
7	4.89560	0.95551	1.50185	1.27815	11.1901	1.13140
8	4.92580	0.94391	1.67523	1.42069	11.2830	1.10856
9	4.48751	0.94779	1.68083	1.47476	11.3661	1.13140
10	4.53367	0.90016	1.69194	1.48160	11.4411	1.12493
11	4.56851	0.96698	1.71560	1.49290	11.5213	1.19996
12	4.60517	0.95551	1.72633	1.50851	11.5515	1.11514
13	4.63860	0.94001	1.73166	1.58719	11.6404	1.16315
14	4.67283	0.85866	1.76644	1.60743	11.7211	1.18173
15	4.69957	0.96317	1.78171	1.61939	11.8025	1.21194

OBS	LRT
1	1.94591
2	2.11021
3	1.87180
4	1.87180
5	1.50408
6	1.38629
7	1.51072
8	1.57898
9	1.69194
10	1.67522

11	1.53255
12	1.60743
13	1.51293
14	1.54756
15	1.62924

OBS	YEAR	CPI	SPSD	IPS	SPST	GDRL	RD	RT
16	1998	95.8	2.60	6.14	5.14	138542.8	3.44	5.23
17	1999	98.5	2.58	6.28	5.38	143879.0	3.13	4.87
18	2000	100.5	2.43	6.36	5.46	149658.0	3.00	4.50
19	2001	102.4	2.45	6.45	5.57	150231.1	3.40	4.45

OBS	GPL	LCPI	LSPSD	LIPS	LSPST	LGDRL	LRD
16	111.8	4.56226	0.95551	1.81482	1.63705	11.8389	1.23547
17	114.9	4.59006	0.94778	1.83737	1.68269	11.8767	1.14103
18	115.3	4.61016	0.88789	1.85003	1.69745	11.9161	1.09861
19	116.2	4.62889	0.89608	1.86408	1.71739	11.9199	1.22377

OBS	LRT
16	1.65441
17	1.58309
18	1.50407
19	1.49290

OBS	YEAR	DDC	TDC
1	1983	9449.7	18865.3
2	1984	10311.3	20779.4
3	1985	11900.5	22551.8
4	1986	12666.7	23773.3
5	1987	16466.6	25919.4
6	1988	18814.9	28931.0
7	1989	20610.1	39772.2
8	1990	21196.8	43549.0
9	1991	23850.9	51742.2
10	1992	24527.1	58411.6
11	1993	32772.8	65196.9
12	1994	37002.2	68732.1
13	1995	38410.0	74310.6
14	1996	49442.6	95130.5
15	1997	51464.4	102461.3

OBS	DATE	LDDC	LTDC
1	JAN83	9.1537	9.8451
2	JAN84	9.2410	9.9417
3	JAN85	9.3843	10.0236
4	JAN86	9.4467	10.0763
5	JAN87	9.7091	10.1627
6	JAN88	9.8424	10.2727
7	JAN89	9.9335	10.5909
8	JAN90	9.9616	10.6816
9	JAN91	10.0796	10.8540
10	JAN92	10.1075	10.9753

11	JAN93	10.3974	11.0852
12	JAN94	10.5187	11.1380
13	JAN95	10.5561	11.2160
14	JAN96	10.8086	11.4630
15	JAN97	10.8486	11.5372

OBS	LAG1DDC	LAG1TDC
1	.	.
2	9.1537	9.8451
3	9.2410	9.9417
4	9.3843	10.0236
5	9.4467	10.0763
6	9.7091	10.1627
7	9.8424	10.2727
8	9.9335	10.5909
9	9.9616	10.6816
10	10.0796	10.8540
11	10.1075	10.9753
12	10.3974	11.0852
13	10.5187	11.1380
14	10.5561	11.2160
15	10.8086	11.4630

OBS	YEAR	DDC	TDC
16	1998	53272.2	103860.9
17	1999	55162.1	104585.1
18	2000	59042.5	106325.7
19	2001	62107.8	107531.4

OBS	DATE	LDDC	LTDC
16	JAN98	10.8832	11.5508
17	JAN99	10.9180	11.5578
18	JAN00	10.9860	11.5743
19	JAN01	10.0366	11.5855

OBS	LAG1DDC	LAG1TDC
16	10.8486	11.5372
17	10.8832	11.5508
18	10.9180	11.5578
19	10.9860	11.5743

OBS	YEAR	DDI	TDI	IID	DATE	LDDI
1	1983	85.0	125.0	254.0	JAN83	4.44265
2	1984	127.1	195.1	331.1	JAN84	4.84497
3	1985	139.5	250.3	365.0	JAN85	4.93806
4	1986	168.2	290.7	406.5	JAN86	5.12515
5	1987	189.2	317.3	515.2	JAN87	5.24280
6	1988	213.7	342.2	652.7	JAN88	5.36457
7	1989	221.2	350.3	667.1	JAN89	5.39907
8	1990	231.8	275.3	672.6	JAN90	5.44587
9	1991	236.1	322.6	687.1	JAN91	5.46426
10	1992	341.2	334.3	667.8	JAN92	5.83247
11	1993	421.1	407.5	784.3	JAN93	6.04287

12	1994	1425.9	1491.0	1673.2	JAN94	7.26256
13	1995	1347.6	1303.9	1178.4	JAN95	7.20608
14	1996	1720.9	1796.8	4525.9	JAN96	7.45060
15	1997	1875.8	2114.2	4865.5	JAN97	7.53679
16	1998	4572.3	2368.4	6732.8	JAN98	8.42777
17	1999	5673.6	2959.7	15867.5	JAN99	8.64358
18	2000	6763.4	4560.4	19929.8	JAN00	8.81928
19	2001	7307.7	5380.7	25676.3	JAN01	8.89668

OBS	LTDI	LIID	LAG1DDI	LAG1TDI	LAG1IID
1	4.82831	5.5373	.	.	.
2	5.27351	5.8024	4.44265	4.82831	5.53733
3	5.52266	5.8999	4.84497	5.27351	5.80242
4	5.67229	6.0076	4.93806	5.52266	5.89990
5	5.75985	6.2446	5.12515	5.67229	6.00758
6	5.83540	6.4811	5.24280	5.75985	6.24456
7	5.85879	6.5029	5.36457	5.83540	6.48112
8	5.61786	6.5112	5.39907	5.85879	6.50294
9	5.77641	6.5325	5.44587	5.61786	6.51115
10	5.81204	6.5040	5.46426	5.77641	6.53248
11	6.01004	6.6648	5.83247	5.81204	6.50399
12	7.30720	7.4225	6.04287	6.01004	6.66479
13	7.17312	7.0719	7.26256	7.30720	7.42249
14	7.49376	8.4176	7.20608	7.17312	7.07191
15	7.65643	8.4899	7.45060	7.49376	8.41757
16	7.76997	8.8147	7.53679	7.65643	8.48992
17	7.99284	9.6720	8.42777	7.76997	8.81475
18	8.42517	9.9000	8.64358	7.99284	9.67203
19	8.59057	10.1533	8.81928	8.42517	9.89997

SYSLIN Procedure

Model Summary

Model Variables	17
Endogenous	5
Exogenous	12
Parameters	25
Equations	5
Number of Statements	5

Model Variables: LDDC LTDC LDDI LTDI LIID LGDRL LRD LRT LCPI
LSPSD LSPST LIPS LAG1DDC LAG1TDC LAG1DDI LAG1TDI LAG1IID

Parameters: A1 A2 A3 A4 A5 B1 B2 B3 B4 B5 C1 C2 C3 C4 C5 D1 D2
D3 D4 D5 E1 E2 E3 E4 E5

Equations: LDDC LTDC LDDI LTDI LIID

The SAS System 7
11:51 Tuesday, June 11, 2002

SYSLIN Procedure

The 5 Equations to Estimate are:

```
LDDC = F( A1(1), A2(LGDRL), A3(LRD), A4(LCPI), A5(LAG1DDC)
LTDC = F( B1(1), B2(LGDRL), B3(LRT), B4(LCPI), B5(LAG1TDC)
LDDI = F( C1(1), C2(LGDRL), C3(LSPSD), C4(LCPI), C5(LAG1DDI)
LTDI = F( D1(1), D2(LGDRL), D3(LSPST), D4(LCPI), D5(LAG1TDI)
LIID = F( E1(1), E2(LGDRL), E3(LIPS), E4(LCPI), E5(LAG1IID)
```

The SAS System 8
11:51 Tuesday, June 11, 2002

SYSLIN Procedure
OLS Estimation

OLS Estimation Summary

Dataset Option	Dataset
DATA=	E
Parameters Estimated	25

Minimization Summary

Method	GAUSS
Iterations	1
Final Convergence Criteria	
R	0
PPC	5.32E-10
RPC(E1)	246561.1
Object	0.99927143
Trace(S)	0.38964492
Objective Value	0.27504347

Observations Processed

Read	19
Solved	19
Used	17
Missing	0

The SAS System 9
11:51 Tuesday, June 11, 2002

SYSLIN Procedure
OLS Estimation

Linear OLS Summary of Residual Errors

Equation	DF Model	DF Error	SSE	MSE	Root MSE	R-Square	Adj R-Sq
LDDC	5	12	0.0720	0.005997	0.07744	0.9861	0.9814
LTDC	5	12	0.0292	0.002430	0.04930	0.9941	0.9921
LDDI	5	12	1.3085	0.01904	0.33022	0.9608	0.9477
LTDI	5	12	1.3917	0.01597	0.34055	0.9289	0.9052
LIID	5	12	1.8744	0.05620	0.39522	0.9436	0.9248

Appendix D: Theil's Inequality Coefficient Results

Linear OLS Parameter Estimates

Parameter	Estimate	Approx. Std Err	'T' Ratio	Approx. Prob>|T|
A1	-4.724091	3.27606	-1.44	0.1749
A2	1.175399	0.64885	1.81	0.0951
A3	0.273101	0.14643	1.87	0.0885
A4	-0.124517	0.20090	-0.62	0.5470
A5	0.529132	0.39121	1.35	0.1862
B1	-2.957346	1.97012	-1.50	0.1558
B2	1.726732	0.39707	4.35	0.0009
B3	0.349893	0.07174	4.88	0.0004
B4	-0.136180	0.15908	-0.86	0.4087
B5	0.149465	0.31276	0.48	0.6201
C1	-3.521726	1.90782	-1.85	0.0780
C2	0.689539	0.97811	0.71	0.4943
C3	1.390527	0.38810	3.58	0.0035
C4	-0.635911	1.00594	-0.63	0.5391
C5	0.749520	0.31466	2.38	0.0394
D1	-3.813234	1.93061	-1.98	0.0746
D2	0.658562	0.94292	0.69	0.4982
D3	1.252651	0.67492	1.86	0.0785
D4	-0.262318	1.06628	-0.25	0.8098
D5	0.776406	0.27263	2.85	0.0147
E1	-3.743583	2.63173	-1.42	0.1765
E2	0.242672	0.13459	1.80	0.0896
E3	1.718823	0.61946	2.77	0.0145
E4	-0.719866	1.08913	-0.66	0.5212
E5	0.758722	0.27536	2.76	0.0151

Number of Observations		Statistics for System	
Used	17	Objective	0.2750
Missing	2	Objective*N	4.6757

SIMLIN Procedure

Model Summary

Model Variables	17
Endogenous	5
Exogenous	12
Parameters	25
Equations	5
Number of Statements	5

Model Variables: LDDC LTDC LDDI LTDI LIID LGDRL LRD LRT LCPI
LSPSD LSPST LIPS LAG1DDC LAG1TDC LAG1DDI LAG1TDI LAG1IID

Parameters: A1: -4.724(-1.4) A2: 1.175(1.8)
A3: 0.2731(1.87) A4: -0.1245(-0.62)
A5: 0.5291(1.35) B1: -2.957(-1.5)
B2: 1.727(4.3) B3: 0.3499(4.9)
B4: -0.1362(-0.86) B5: 0.1495(0.48)
C1: -3.522(-1.85) C2: 0.6895(0.71)C3: 1.3905(3.6)
C4: -0.6359(-0.63) C5: 0.7495(2.4)
D1: -3.813(-1.98) D2: 0.6585(0.7)
D3: 1.2526(1.86) D4: -0.2623(-0.25)
D5: 0.7764(2.8) E1: -3.743(-1.4) E2: 0.2426(1.8)
E3: 1.719(2.77) E4: -0.7199(-0.66)
E5: 0.7587(2.8)

Equations: LDDC LTDC LDDI LTDI LIID

SIMLIN Procedure
Simultaneous Simulation

Solution Summary

Dataset Option	Dataset
DATA=	E
OUT=	G
Variables Solved	5
Solution Method	NEWTON
CONVERGE=	1E-8
Maximum CC	0
Maximum Iterations	1
Total Iterations	17
Average Iterations	1
Observations Processed	
Read	19
Solved	17
Failed	0

Variables Solved For: LDDC LTDC LDDI LTDI LIID

SIMLIN Procedure
Simultaneous Simulation

Descriptive Statistics

			Actual		Predicted	
Variable	Nobs	N	Mean	Std	Mean	Std
LDDC	17	17	10.9615	0.5682	10.9615	0.5642
LTDC	17	17	10.3159	0.5539	10.3159	0.5522
LDDI	17	17	6.6529	1.4436	6.6529	1.4150
LTDI	17	17	6.7220	1.1058	6.7220	1.0658
LIID	17	17	7.4877	1.4417	7.4877	1.4004

Statistics of Fit

Variable	N	Mean Error	Mean % Error	Mean Abs Error	Mean Abs % Error
LDDC	17	0	0.0940	0.0664	0.61233
LTDC	17	0	0.0934	0.0322	0.31409
LDDI	17	0	0.9220	0.2202	2.50197
LTDI	17	0	0.9276	0.2355	2.51714
LIID	17	0	0.9951	0.2733	2.61782

Statistics of Fit

Variable	RMS Error	RMS % Error	R-Square
LDDC	0.0746	0.6889	0.9861
LTDC	0.0398	0.3897	0.9941
LDDI	0.2737	2.4623	0.9608
LTDI	0.2845	2.6979	0.9289
LIID	0.2956	3.0664	0.9436

Theil Forecast Error Statistics

			MSE Decomposition Proportions				
Variable	N	MSE	Corr (R)	**Bias** (UM)	Reg (UR)	Dist (UD)	**Var** (US)	**Covar** (UC)
LDDC	17	0.00600	0.997	0.000	0.000	1.000	0.001	0.999
LTDC	17	0.00243	0.997	0.000	0.000	1.000	0.001	0.999
LDDI	17	0.01904	0.993	0.000	0.000	1.000	0.003	0.997
LTDI	17	0.01597	0.992	0.000	0.000	1.000	0.004	0.996
LIID	17	0.05620	0.991	0.000	0.000	1.000	0.006	0.994

SIMLIN Procedure
Simultaneous Simulation

Theil Forecast Error Statistics

Inequality Coef

Variable	U1	**U**
LDDC	0.0059	0.0030
LTDC	0.0040	0.0020
LDDI	0.0068	0.0040
LTDI	0.0072	0.0051
LIID	0.0076	0.0052

Theil Relative Change Forecast Error Statistics

			Relative Change	MSE Decomposition Proportions				
Variable	N	MSE	Corr (R)	Bias (UM)	Reg (UR)	Dist (UD)	Var (US)	Covar (UC)
LDDC	16	0.0000372	0.842	0.003	0.000	0.997	0.049	0.948
LTDC	16	0.0000173	0.891	0.001	0.000	0.999	0.059	0.940
LDDI	16	0.000215	0.828	0.001	0.000	0.999	0.076	0.923
LTDI	16	0.000232	0.818	0.002	0.000	0.998	0.073	0.925
LIID	16	0.000219	0.804	0.000	0.000	1.000	0.064	0.936

Appendix D: Theil's Inequality Coefficient Results

Theil Relative Change Forecast Error Statistics

Variable	Inequality Coef U1	U
LDDC	0.5045	0.2753
LTDC	0.3030	0.1546
LDDI	0.5236	0.3171
LTDI	0.5959	0.3877
LIID	0.5204	0.3250

APPENDIX E

CORRELATION RESULTS

Remali Yusoff
Institute for Middle Eastern and Islamic Studies
University of Durham

Correlation Results

odel: MODEL1
ependent Variable: DDC conventional demand deposit

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Prob>F
Model	1	17228932435	17228932435	205.879	0.0001
Error	16	1338958432.2	83684902.015		
C Total	17	18567890868			

Root MSE	9147.94523	R-square	0.9279
Dep Mean	63531.35556	Adj R-sq	0.9234
C.V.	14.39910		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|
INTERCEP	1	19478	3751.7491645	5.192	0.0001
MB	1	0.828624	0.05775001	14.348	0.0001

Variable	DF	Variable Label
INTERCEP	1	Intercept
MB	1	monetary base

Durbin-Watson D	0.838
(For Number of Obs.)	18
1st Order Autocorrelation	0.481

The SAS System 3
12:08 Monday, October 28, 2002

Model: MODEL2
Dependent Variable: TDC conventional time deposit

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Prob>F
Model	1	5123632621.2	5123632621.2	292.158	0.0001
Error	16	280595064.19	17537191.512		
C Total	17	5404227685.4			

Root MSE	4187.74301	R-square	0.9481
Dep Mean	33223.40556	Adj R-sq	0.9448
C.V.	12.60480		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|
INTERCEP	1	9199.712924	1717.4743545	5.357	0.0001
MB	1	0.451874	0.02643678	17.093	0.0001

Variable	DF	Variable Label
INTERCEP	1	Intercept
MB	1	monetary base

Durbin-Watson D	1.595
(For Number of Obs.)	18
1st Order Autocorrelation	0.139

The SAS System 5

12:08 Monday, October 28, 2002

Model: MODEL3
Dependent Variable: DDI islamic demand deposit

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Prob>F
Model	1	64003093.92	64003093.92	46.594	0.0001
Error	16	21978197.876	1373637.3672		
C Total	17	85981291.796			

Root MSE	1172.02277	R-square	0.7444
Dep Mean	1912.57222	Adj R-sq	0.7284
C.V.	61.27992		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|
INTERCEP	1	-772.470844	480.66919134	-1.607	0.1276
MB	1	0.050504	0.00739886	6.826	0.0001

Variable	DF	Variable Label
INTERCEP	1	Intercept
MB	1	monetary base

Durbin-Watson D	0.876
(For Number of Obs.)	18
1st Order Autocorrelation	0.531

The SAS System 7
12:08 Monday, October 28, 2002

Model: MODEL4
Dependent Variable: TDI islamic time deposit

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Prob>F
Model	1	21621694.926	21621694.926	69.569	0.0001
Error	16	4972721.1704	310795.07315		
C Total	17	26594416.096			

Root MSE	557.48998	R-square	0.8130
Dep Mean	1383.92778	Adj R-sq	0.8013
C.V.	40.28317		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|
INTERCEP	1	-176.686728	228.63741501	-0.773	0.4509
MB	1	0.029354	0.00351938	8.341	0.0001

Variable	DF	Variable Label
INTERCEP	1	Intercept
MB	1	monetary base

The SAS System 8
12:08 Monday, October 28, 2002

Durbin-Watson D	1.323
(For Number of Obs.)	18
1st Order Autocorrelation	0.328

The SAS System

12:08 Monday, October 28, 2002

Model: MODEL5
Dependent Variable: IID islamic investment deposit

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Prob>F
Model	1	686146774.23	686146774.23	37.145	0.0001
Error	16	295555943.51	18472246.469		
C Total	17	981702717.74			

Root MSE	4297.93514	R-square	0.6989
Dep Mean	4861.04444	Adj R-sq	0.6801
C.V.	88.41588		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|
INTERCEP	1	-3930.380741	1762.6662773	-2.230	0.0404
MB	1	0.165362	0.02713241	6.095	0.0001

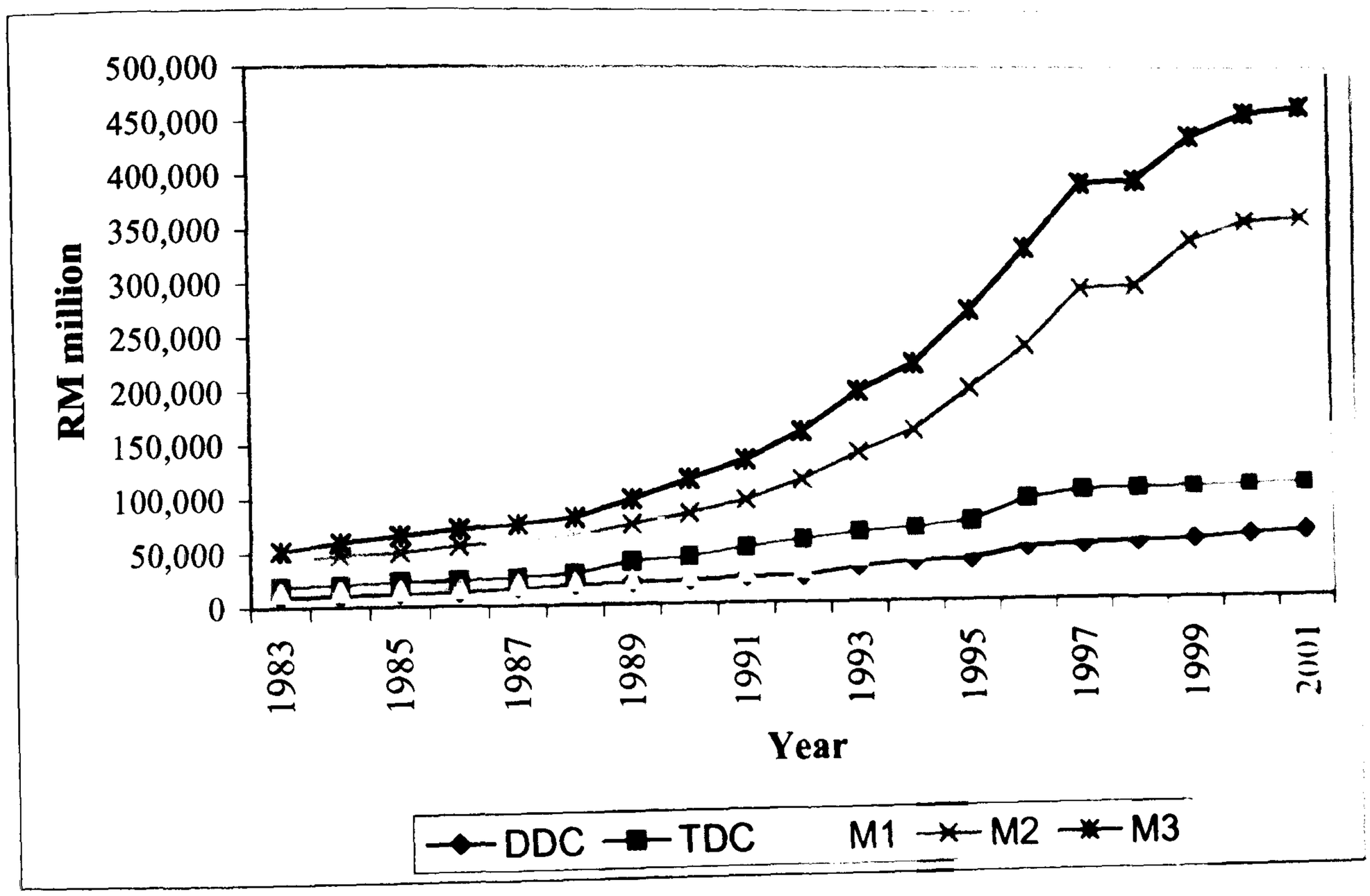
Variable	DF	Variable Label
INTERCEP	1	Intercept
MB	1	monetary base

Durbin-Watson D	0.421
(For Number of Obs.)	18
1st Order Autocorrelation	0.625

APPENDIX F

BANK DEPOSITS AND MONEY SUPPLY

The conventional bank deposits and monetary aggregates/money supply, 1983-2001 (RM million)



The Islamic bank deposits and monetary aggregates/money supply, 1983-2001 (RM million)